

SEQUENCE LISTING

<110> Kasibhatla, Shailaja  
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Kuemmerle, Jared

<120> Methods of Treating Diseases Responsive to Induction of Apoptosis  
and Screening Assays

<130> 1735.0840002

<150> US 60/484,750  
<151> 2003-07-07

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<151> 2003-04-18

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<170> PatentIn version 3.2

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Asp Asn Asn Thr Lys Ala Asn Val Thr Lys Pro Lys Arg Cys Ser Gly  
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Ser Ile Cys Tyr Gly Thr Ile Ala Val Ile Val Phe Phe Leu Ile Gly

Phe Met Ile Gly Tyr Leu Gly Tyr Cys Lys Gly Val Glu Pro Lys Thr  
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Glu Cys Glu Arg Leu Ala Gly Thr Glu Ser Pro Val Arg Glu Glu Pro  
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Gly Glu Asp Phe Pro Ala Ala Arg Arg Leu Tyr Trp Asp Asp Leu Lys  
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Arg Lys Leu Ser Glu Lys Leu Asp Ser Thr Asp Phe Thr Gly Thr Ile  
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Lys Leu Leu Asn Glu Asn Ser Tyr Val Pro Arg Glu Ala Gly Ser Gln  
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Lys Asp Glu Asn Leu Ala Leu Tyr Val Glu Asn Gln Phe Arg Glu Phe  
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Lys Leu Ser Lys Val Trp Arg Asp Gln His Phe Val Lys Ile Gln Val  
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Lys Asp Ser Ala Gln Asn Ser Val Ile Ile Val Asp Lys Asn Gly Arg  
195 200 205

Leu Val Tyr Leu Val Glu Asn Pro Gly Gly Tyr Val Ala Tyr Ser Lys  
210 215 220

Ala Ala Thr Val Thr Gly Lys Leu Val His Ala Asn Phe Gly Thr Lys  
225 230 235 240

Lys Asp Phe Glu Asp Leu Tyr Thr Pro Val Asn Gly Ser Ile Val Ile  
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Val Arg Ala Gly Lys Ile Thr Phe Ala Glu Lys Val Ala Asn Ala Glu  
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Ser Leu Asn Ala Ile Gly Val Leu Ile Tyr Met Asp Gln Thr Lys Phe  
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Pro Ile Val Asn Ala Glu Leu Ser Phe Phe Gly His Ala His Leu Gly  
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Ile Glu Arg Ile Pro Glu Leu Asn Lys Val Ala Arg Ala Ala Ala Glu  
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Val Ala Gly Gln Phe Val Ile Lys Leu Thr His Asp Val Glu Leu Asn  
595 600 605

Leu Asp Tyr Glu Arg Tyr Asn Ser Gln Leu Leu Ser Phe Val Arg Asp  
610 615 620

Leu Asn Gln Tyr Arg Ala Asp Ile Lys Glu Met Gly Leu Ser Leu Gln  
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Trp Leu Tyr Ser Ala Arg Gly Asp Phe Phe Arg Ala Thr Ser Arg Leu  
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Thr Thr Asp Phe Gly Asn Ala Glu Lys Thr Asp Arg Phe Val Met Lys  
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Lys Leu Asn Asp Arg Val Met Arg Val Glu Tyr His Phe Leu Ser Pro  
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690 695 700

Gly Ser His Thr Leu Pro Ala Leu Leu Glu Asn Leu Lys Leu Arg Lys  
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Gln Asn Asn Gly Ala Phe Asn Glu Thr Leu Phe Arg Asn Gln Leu Ala  
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Asp Asn Asn Thr Lys Ala Asn Val Thr Lys Pro Lys Arg Cys Ser Gly  
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Ser Ile Cys Tyr Gly Thr Ile Ala Val Ile Val Phe Phe Leu Ile Gly  
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Phe Met Ile Gly Tyr Leu Gly Tyr Cys Lys Gly Val Glu Pro Lys Thr  
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Gly Glu Asp Phe Pro Ala Ala Arg Arg Leu Tyr Trp Asp Asp Leu Lys  
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Arg Lys Leu Ser Glu Lys Leu Asp Ser Thr Asp Phe Thr Gly Thr Ile  
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Lys Leu Leu Asn Glu Asn Ser Tyr Val Pro Arg Glu Ala Gly Ser Gln  
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Lys Asp Glu Asn Leu Ala Leu Tyr Val Glu Asn Gln Phe Arg Glu Phe  
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Lys Asp Ser Ala Gln Asn Ser Val Ile Ile Val Asp Lys Asn Gly Arg  
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Leu Val Tyr Leu Val Glu Asn Pro Gly Gly Tyr Val Ala Tyr Ser Lys  
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Ala Ala Thr Val Thr Gly Lys Leu Val His Ala Asn Phe Gly Thr Lys  
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Lys Asp Phe Glu Asp Leu Tyr Thr Pro Val Asn Gly Ser Ile Val Ile  
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Val Arg Ala Gly Lys Ile Thr Phe Ala Glu Lys Val Ala Asn Ala Glu

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Val Ala Gly Gln Phe Val Ile Lys Leu Thr His Asp Val Glu Leu Asn  
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Trp Leu Tyr Ser Ala Arg Gly Asp Phe Phe Arg Ala Thr Ser Arg Leu  
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Thr Thr Asp Phe Gly Asn Ala Glu Lys Thr Asp Arg Phe Val Met Lys  
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Lys Leu Asn Asp Arg Val Met Arg Val Glu Tyr His Phe Leu Ser Pro  
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Tyr Val Ser Pro Lys Glu Ser Pro Phe Arg His Val Phe Trp Gly Ser  
690 695 700

Gly Ser His Thr Leu Pro Ala Leu Leu Glu Asn Leu Lys Leu Arg Lys  
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Gln Asn Asn Gly Ala Phe Asn Glu Thr Leu Phe Arg Asn Gln Leu Ala  
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Asp Asn Asn Thr Lys Ala Asn Val Thr Lys Pro Lys Arg Cys Ser Gly  
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Ser Ile Cys Tyr Gly Thr Ile Ala Val Ile Val Phe Phe Leu Ile Gly  
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Phe Met Ile Gly Tyr Leu Gly Tyr Cys Lys Gly Val Glu Pro Lys Thr  
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Glu Cys Glu Arg Leu Ala Gly Thr Glu Ser Pro Val Arg Glu Glu Pro  
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Gly Glu Asp Phe Pro Ala Ala Arg Arg Leu Tyr Trp Asp Asp Leu Lys  
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Arg Lys Leu Ser Glu Lys Leu Asp Ser Thr Asp Phe Thr Gly Thr Ile  
130 135 140

Lys Leu Leu Asn Glu Asn Ser Tyr Val Pro Arg Glu Ala Gly Ser Gln  
145 150 155 160

Lys Asp Glu Asn Leu Ala Leu Tyr Val Glu Asn Gln Phe Arg Glu Phe  
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Lys Leu Ser Lys Val Trp Arg Asp Gln His Phe Val Lys Ile Gln Val  
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Lys Asp Ser Ala Gln Asn Ser Val Ile Ile Val Asp Lys Asn Gly Arg



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His	Tyr	Val	Val	Val	Gly	Ala	Gln	Arg	Asp	Ala	Trp	Gly	Pro	Gly	Ala	
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Ile Phe Ala Ser Trp Ser Ala Gly Asp Phe Gly Ser Val Gly Ala Thr  
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Val Lys His Pro Val Thr Gly Gln Phe Leu Tyr Gln Asp Ser Asn Trp  
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Ala Ser Lys Val Glu Lys Leu Thr Leu Asp Asn Ala Ala Phe Pro Phe  
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Leu Ala Tyr Ser Gly Ile Pro Ala Val Ser Phe Cys Phe Cys Glu Asp  
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Thr Asp Tyr Pro Tyr Leu Gly Thr Thr Met Asp Thr Tyr Lys Glu Leu  
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Ile Glu Arg Ile Pro Glu Leu Asn Lys Val Ala Arg Ala Ala Glu  
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Val Ala Gly Gln Phe Val Ile Lys Leu Thr His Asp Val Glu Leu Asn  
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Leu Asp Tyr Glu Arg Tyr Asn Ser Gln Leu Leu Ser Phe Val Arg Asp  
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Leu Asn Gln Tyr Arg Ala Asp Ile Lys Glu Met Gly Leu Ser Leu Gln  
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Trp Leu Tyr Ser Ala Arg Gly Asp Phe Phe Arg Ala Thr Ser Arg Leu  
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Thr Thr Asp Phe Gly Asn Ala Glu Lys Thr Asp Arg Phe Val Met Lys  
660 665 670

Lys Leu Asn Asp Arg Val Met Arg Val Glu Tyr His Phe Leu Ser Pro  
675 680 685

Tyr Val Ser Pro Lys Glu Ser Pro Phe Arg His Val Phe Trp Gly Ser  
690 695 700

Gly Ser His Thr Leu Pro Ala Leu Leu Glu Asn Leu Lys Leu Arg Lys  
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Val Trp Asp Ile Asp Asn Glu Phe  
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Pro Leu Ser Tyr Thr Arg Phe Ser Leu Ala Arg Gln Val Asp Gly Asp  
20 25 30

Asn Ser His Val Glu Met Lys Leu Ala Val Asp Glu Glu Glu Asn Ala  
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Asp Asn Asn Thr Lys Ala Asn Val Thr Lys Pro Lys Arg Cys Ser Gly  
50 55 60

Ser Ile Cys Tyr Gly Thr Ile Ala Val Ile Val Phe Phe Leu Ile Gly  
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Phe Met Ile Gly Tyr Leu Gly Tyr Cys Lys Gly Val Glu Pro Lys Thr  
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Glu Cys Glu Arg Leu Ala Gly Thr Glu Ser Pro Val Arg Glu Glu Pro  
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Gly Glu Asp Phe Pro Ala Ala Arg Arg Leu Tyr Trp Asp Asp Leu Lys  
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Arg Lys Leu Ser Glu Lys Leu Asp Ser Thr Asp Phe Thr Ser Thr Ile

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Lys Asp Glu Asn Leu Ala Leu Tyr Val Glu Asn Gln Phe Arg Glu Phe 165 170 175		
Lys Leu Ser Lys Val Trp Arg Asp Gln His Phe Val Lys Ile Gln Val 180 185 190		
Lys Asp Ser Ala Gln Asn Ser Val Ile Ile Val Asp Lys Asn Gly Arg 195 200 205		
Leu Val Tyr Leu Val Glu Asn Pro Gly Gly Tyr Val Ala Tyr Ser Lys 210 215 220		
Ala Ala Thr Val Thr Gly Lys Leu Val His Ala Asn Phe Gly Thr Lys 225 230 235 240		
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Val Arg Ala Gly Lys Ile Thr Phe Ala Glu Lys Val Ala Asn Ala Glu 260 265 270		
Ser Leu Asn Ala Ile Gly Val Leu Ile Tyr Met Asp Gln Thr Lys Phe 275 280 285		
Pro Ile Val Asn Ala Glu Leu Ser Phe Phe Gly His Ala His Leu Gly 290 295 300		
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Cys Pro Ser Asp Trp Lys Thr Asp Ser Thr Cys Arg Met Val Thr Ser 355 360 365		
Glu Ser Lys Asn Val Lys Leu Thr Val Ser Asn Val Leu Lys Glu Ile 370 375 380		

Lys Ile Leu Asn Ile Phe Gly Val Ile Lys Gly Phe Val Glu Pro Asp  
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His Tyr Val Val Val Gly Ala Gln Arg Asp Ala Trp Gly Pro Gly Ala  
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Ala Lys Ser Gly Val Gly Thr Ala Leu Leu Lys Leu Ala Gln Met  
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Phe Ser Asp Met Val Leu Lys Asp Gly Phe Gln Pro Ser Arg Ser Ile  
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Ile Phe Ala Ser Trp Ser Ala Gly Asp Phe Gly Ser Val Gly Ala Thr  
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Glu Trp Leu Glu Gly Tyr Leu Ser Ser Leu His Leu Lys Ala Phe Thr  
465 470 475 480

Tyr Ile Asn Leu Asp Lys Ala Val Leu Gly Thr Ser Asn Phe Lys Val  
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Ser Ala Ser Pro Leu Leu Tyr Thr Leu Ile Glu Lys Thr Met Gln Asn  
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Val Lys His Pro Val Thr Gly Gln Phe Leu Tyr Gln Asp Ser Asn Trp  
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Lys Leu Asn Asp Arg Val Met Arg Val Glu Tyr His Phe Leu Ser Pro  
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Tyr Val Ser Pro Lys Glu Ser Pro Phe Arg His Val Phe Trp Gly Ser  
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Gly Ser His Thr Leu Pro Ala Leu Leu Glu Asn Leu Lys Leu Arg Lys  
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Gln Asn Asn Gly Ala Phe Asn Glu Thr Leu Phe Arg Asn Gln Leu Ala  
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Val Trp Asp Ile Asp Asn Glu Phe  
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Pro Leu Ser Tyr Thr Arg Phe Ser Leu Ala Arg Gln Val Asp Gly Asp  
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Asn Ser His Val Glu Met Lys Leu Ala Val Asp Glu Glu Glu Asn Ala  
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Asp Asn Asn Thr Lys Ala Asn Val Thr Lys Pro Lys Arg Cys Ser Gly  
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Ser Ile Cys Tyr Gly Thr Ile Ala Val Ile Val Phe Phe Leu Ile Gly

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Cys Pro Ser Asp Trp Lys Thr Asp Ser Thr Cys Arg Met Val Thr Ser  
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Glu Ser Lys Asn Val Lys Leu Thr Val Ser Asn Val Leu Lys Glu Ile  
370 375 380

Lys Ile Leu Asn Ile Phe Gly Val Ile Lys Gly Phe Val Glu Pro Asp  
385 390 395 400

His Tyr Val Val Val Gly Ala Gln Arg Asp Ala Trp Gly Pro Gly Ala  
405 410 415

Ala Lys Ser Gly Val Gly Thr Ala Leu Leu Leu Lys Leu Ala Gln Met  
420 425 430

Phe Ser Asp Met Val Leu Lys Asp Gly Phe Gln Pro Ser Arg Ser Ile  
435 440 445

Ile Phe Ala Ser Trp Ser Ala Gly Asp Phe Gly Ser Val Gly Ala Thr  
450 455 460

Glu Trp Leu Glu Gly Tyr Leu Ser Ser Leu His Leu Lys Ala Phe Thr  
465 470 475 480

Tyr Ile Asn Leu Asp Lys Ala Val Leu Gly Thr Ser Asn Phe Lys Val  
485 490 495

Ser Ala Ser Pro Leu Leu Tyr Thr Leu Ile Glu Lys Thr Met Gln Asn  
500 505 510

Val Lys His Pro Val Thr Gly Gln Phe Leu Tyr Gln Asp Ser Asn Trp  
515 520 525

Ala Ser Lys Val Glu Lys Leu Thr Leu Asp Asn Ala Ala Phe Pro Phe  
530 535 540

Leu Ala Tyr Ser Gly Ile Pro Ala Val Ser Phe Cys Phe Cys Glu Asp  
545 550 555 560



Thr Asp Tyr Pro Tyr Leu Gly Thr Thr Met Asp Thr Tyr Lys Glu Leu  
565 570 575

Ile Glu Arg Ile Pro Glu Leu Asn Lys Val Ala Arg Ala Ala Glu  
580 585 590

Val Ala Gly Gln Phe Val Ile Lys Leu Thr His Asp Val Glu Leu Asn  
595 600 605

Leu Asp Tyr Glu Arg Tyr Asn Ser Gln Leu Leu Ser Phe Val Arg Asp  
610 615 620

Leu Asn Gln Tyr Arg Ala Asp Ile Lys Glu Met Gly Leu Ser Leu Gln  
625 630 635 640

Trp Leu Tyr Ser Ala Arg Gly Asp Phe Phe Arg Ala Thr Ser Arg Leu  
645 650 655

Thr Thr Asp Phe Gly Asn Ala Glu Lys Thr Asp Arg Phe Val Met Lys  
660 665 670

Lys Leu Asn Asp Arg Val Met Arg Val Glu Tyr His Phe Leu Ser Pro  
675 680 685

Tyr Val Ser Pro Lys Glu Ser Pro Phe Arg His Val Phe Trp Gly Ser  
690 695 700

Gly Ser His Thr Leu Pro Ala Leu Leu Glu Asn Leu Lys Leu Arg Lys  
705 710 715 720

Gln Asn Asn Gly Ala Phe Asn Glu Thr Leu Phe Arg Asn Gln Leu Ala  
725 730 735

Leu Ala Thr Trp Thr Ile Gln Gly Ala Ala Asn Ala Leu Ser Gly Asp  
740 745 750

Val Trp Asp Ile Asp Asn Glu Phe  
755 760

<210> 6  
<211> 760  
<212> PRT  
<213> Homo sapiens

<400> 6

Met Met Asp Gln Ala Arg Ser Ala Phe Ser Asn Leu Phe Gly Gly Glu

1	5				10				15						
Pro	Leu	Ser	Tyr	Thr	Arg	Phe	Ser	Leu	Ala	Arg	Gln	Val	Asp	Gly	Asp
			20					25					30		
Asn	Ser	His	Val	Glu	Met	Lys	Leu	Ala	Val	Asp	Glu	Glu	Glu	Asn	Ala
		35					40					45			
Asp	Asn	Asn	Thr	Lys	Ala	Asn	Val	Thr	Lys	Pro	Lys	Arg	Cys	Ser	Gly
	50					55					60				
Ser	Ile	Cys	Tyr	Gly	Thr	Ile	Ala	Val	Ile	Val	Phe	Phe	Leu	Ile	Gly
65					70					75					80
Phe	Met	Ile	Gly	Tyr	Leu	Gly	Tyr	Cys	Lys	Gly	Val	Glu	Pro	Lys	Thr
				85					90					95	
Glu	Cys	Glu	Arg	Leu	Ala	Gly	Thr	Glu	Ser	Pro	Val	Arg	Glu	Glu	Pro
			100					105					110		
Gly	Glu	Asp	Phe	Pro	Ala	Ala	Arg	Arg	Leu	Tyr	Trp	Asp	Asp	Leu	Lys
		115					120					125			
Arg	Lys	Leu	Ser	Glu	Lys	Leu	Asp	Ser	Thr	Asp	Phe	Thr	Ser	Thr	Ile
	130					135					140				
Lys	Leu	Leu	Asn	Glu	Asn	Ser	Tyr	Val	Pro	Arg	Glu	Ala	Gly	Ser	Gln
145					150					155					160
Lys	Asp	Glu	Asn	Leu	Ala	Leu	Tyr	Val	Glu	Asn	Gln	Phe	Arg	Glu	Phe
				165					170					175	
Lys	Leu	Ser	Lys	Val	Trp	Arg	Asp	Gln	His	Phe	Val	Lys	Ile	Gln	Val
			180					185					190		
Lys	Asp	Ser	Ala	Gln	Asn	Ser	Val	Ile	Ile	Val	Asp	Lys	Asn	Gly	Arg
		195					200					205			
Leu	Val	Tyr	Leu	Val	Glu	Asn	Pro	Gly	Gly	Tyr	Val	Ala	Tyr	Ser	Lys
	210					215					220				
Ala	Ala	Thr	Val	Thr	Gly	Lys	Leu	Val	His	Ala	Asn	Phe	Gly	Thr	Lys
225					230					235					240
Lys	Asp	Phe	Glu	Asp	Leu	Tyr	Thr	Pro	Val	Asn	Gly	Ser	Ile	Val	Ile
				245					250					255	

Val Arg Ala Gly Lys Ile Thr Phe Ala Glu Lys Val Ala Asn Ala Glu  
260 265 270

Ser Leu Asn Ala Ile Gly Val Leu Ile Tyr Met Asp Gln Thr Lys Phe  
275 280 285

Pro Ile Val Asn Ala Glu Leu Ser Phe Phe Gly His Ala His Leu Gly  
290 295 300

Thr Gly Asp Pro Tyr Thr Pro Gly Phe Pro Ser Phe Asn His Thr Gln  
305 310 315 320

Phe Pro Pro Ser Arg Ser Ser Gly Leu Pro Asn Ile Pro Val Gln Thr  
325 330 335

Ile Ser Arg Ala Ala Ala Glu Lys Leu Phe Gly Asn Met Glu Gly Asp  
340 345 350

Cys Pro Ser Asp Trp Lys Thr Asp Ser Thr Cys Arg Met Val Thr Ser  
355 360 365

Glu Ser Lys Asn Val Lys Leu Thr Val Ser Asn Val Leu Lys Glu Ile  
370 375 380

Lys Ile Leu Asn Ile Phe Gly Val Ile Lys Gly Phe Val Glu Pro Asp  
385 390 395 400

His Tyr Val Val Val Gly Ala Gln Arg Asp Ala Trp Gly Pro Gly Ala  
405 410 415

Ala Lys Ser Gly Val Gly Thr Ala Leu Leu Leu Lys Leu Ala Gln Met  
420 425 430

Phe Ser Asp Met Val Leu Lys Asp Gly Phe Gln Pro Ser Arg Ser Ile  
435 440 445

Ile Phe Ala Ser Trp Ser Ala Gly Asp Phe Gly Ser Val Gly Ala Thr  
450 455 460

Glu Trp Leu Glu Gly Tyr Leu Ser Ser Leu His Leu Lys Ala Phe Thr  
465 470 475 480

Tyr Ile Asn Leu Asp Lys Ala Val Leu Gly Thr Ser Asn Phe Lys Val  
485 490 495

Ser	Ala	Ser	Pro	Leu	Leu	Tyr	Thr	Leu	Ile	Glu	Lys	Thr	Met	Gln	Asn
			500					505					510		
Val	Lys	His	Pro	Val	Thr	Gly	Gln	Phe	Leu	Tyr	Gln	Asp	Ser	Asn	Trp
		515					520					525			
Ala	Ser	Lys	Val	Glu	Lys	Leu	Thr	Leu	Asp	Asn	Ala	Ala	Phe	Pro	Phe
	530					535					540				
Leu	Ala	Tyr	Ser	Gly	Ile	Pro	Ala	Val	Ser	Phe	Cys	Phe	Cys	Glu	Asp
545					550					555					560
Thr	Asp	Tyr	Pro	Tyr	Leu	Gly	Thr	Thr	Met	Asp	Thr	Tyr	Lys	Glu	Leu
				565					570					575	
Ile	Glu	Arg	Ile	Pro	Glu	Leu	Asn	Lys	Val	Ala	Arg	Ala	Ala	Ala	Glu
			580					585					590		
Val	Ala	Gly	Gln	Phe	Val	Ile	Lys	Leu	Thr	His	Asp	Val	Glu	Leu	Asn
		595					600					605			
Leu	Asp	Tyr	Glu	Arg	Tyr	Asn	Ser	Gln	Leu	Leu	Ser	Phe	Val	Arg	Asp
	610					615					620				
Leu	Asn	Gln	Tyr	Arg	Ala	Asp	Ile	Lys	Glu	Met	Gly	Leu	Ser	Leu	Gln
625					630					635					640
Trp	Leu	Tyr	Ser	Ala	Arg	Gly	Asp	Phe	Phe	Arg	Ala	Thr	Ser	Arg	Leu
				645					650					655	
Thr	Thr	Asp	Phe	Gly	Asn	Ala	Glu	Lys	Thr	Asp	Arg	Phe	Val	Met	Lys
			660					665					670		
Lys	Leu	Asn	Asp	Arg	Val	Met	Arg	Val	Glu	Tyr	His	Phe	Leu	Ser	Pro
		675					680					685			
Tyr	Val	Ser	Pro	Lys	Glu	Ser	Pro	Phe	Arg	His	Val	Phe	Trp	Gly	Ser
	690					695					700				
Gly	Ser	His	Thr	Leu	Pro	Ala	Leu	Leu	Glu	Asn	Leu	Lys	Leu	Arg	Lys
705					710					715					720
Gln	Asn	Asn	Gly	Ala	Phe	Asn	Glu	Thr	Leu	Phe	Arg	Asn	Gln	Leu	Ala
				725					730					735	

Leu Ala Thr Trp Thr Ile Gln Gly Ala Ala Asn Ala Leu Ser Gly Asp  
740 745 750

Val Trp Asp Ile Asp Asn Glu Phe  
755 760

<210> 7  
<211> 63  
<212> PRT  
<213> Cavia Sp.

<400> 7

Lys Ile Thr Phe Ala Glu Lys Val Ala Asn Ala Glu Ser Leu Asn Ala  
1 5 10 15

Leu Gly Val Leu Ile Tyr Leu Asp Trp Thr Lys Phe Pro Ile Pro Lys  
20 25 30

Ala Asp Leu Pro Val Phe Gly His Val His Leu Gly Thr Gly Asp Pro  
35 40 45

Tyr Thr Pro Gly Phe Pro Ser Phe Asn His Thr Gln Phe Pro Pro  
50 55 60

<210> 8  
<211> 760  
<212> PRT  
<213> Homo sapiens

<400> 8

Met Met Asp Gln Ala Arg Ser Ala Phe Ser Asn Leu Phe Gly Gly Glu  
1 5 10 15

Pro Leu Ser Tyr Thr Arg Phe Ser Leu Ala Arg Gln Val Asp Gly Asp  
20 25 30

Asn Ser His Val Glu Met Lys Leu Ala Val Asp Glu Glu Glu Asn Ala  
35 40 45

Asp Asn Asn Thr Lys Ala Asn Val Thr Lys Pro Lys Arg Cys Ser Gly  
50 55 60

Ser Ile Cys Tyr Gly Thr Ile Ala Val Ile Val Phe Phe Leu Ile Gly  
65 70 75 80

Phe Met Ile Gly Tyr Leu Gly Tyr Cys Lys Gly Val Glu Pro Lys Thr  
85 90 95

Glu Cys Glu Arg Leu Ala Gly Thr Glu Ser Pro Val Arg Glu Glu Pro  
100 105 110

Gly Glu Asp Phe Pro Ala Ala Arg Arg Leu Tyr Trp Asp Asp Leu Lys  
115 120 125

Arg Lys Leu Ser Glu Lys Leu Asp Ser Thr Asp Phe Thr Ser Thr Ile  
130 135 140

Lys Leu Leu Asn Glu Asn Ser Tyr Val Pro Arg Glu Ala Gly Ser Gln  
145 150 155 160

Lys Asp Glu Asn Leu Ala Leu Tyr Val Glu Asn Gln Phe Arg Glu Phe  
165 170 175

Lys Leu Ser Lys Val Trp Arg Asp Gln His Phe Val Lys Ile Gln Val  
180 185 190

Lys Asp Ser Ala Gln Asn Ser Val Ile Ile Val Asp Lys Asn Gly Arg  
195 200 205

Leu Val Tyr Leu Val Glu Asn Pro Gly Gly Tyr Val Ala Tyr Ser Lys  
210 215 220

Ala Ala Thr Val Thr Gly Lys Leu Val His Ala Asn Phe Gly Thr Lys  
225 230 235 240

Lys Asp Phe Glu Asp Leu Tyr Thr Pro Val Asn Gly Ser Ile Val Ile  
245 250 255

Val Arg Ala Gly Lys Ile Thr Phe Ala Glu Lys Val Ala Asn Ala Glu  
260 265 270

Ser Leu Asn Ala Ile Gly Val Leu Ile Tyr Met Asp Gln Thr Lys Phe  
275 280 285

Pro Ile Val Asn Ala Glu Leu Ser Phe Phe Gly His Ala His Leu Gly  
290 295 300

Thr Gly Asp Pro Tyr Thr Pro Gly Phe Pro Ser Phe Asn His Thr Gln  
305 310 315 320

Phe Pro Pro Ser Arg Ser Ser Gly Leu Pro Asn Ile Pro Val Gln Thr  
325 330 335

Ile Ser Arg Ala Ala Ala Glu Lys Leu Phe Gly Asn Met Glu Gly Asp  
340 345 350

Cys Pro Ser Asp Trp Lys Thr Asp Ser Thr Cys Arg Met Val Thr Ser  
355 360 365

Glu Ser Lys Asn Val Lys Leu Thr Val Ser Asn Val Leu Lys Glu Ile  
370 375 380

Lys Ile Leu Asn Ile Phe Gly Val Ile Lys Gly Phe Val Glu Pro Asp  
385 390 395 400

His Tyr Val Val Val Gly Ala Gln Arg Asp Ala Trp Gly Pro Gly Ala  
405 410 415

Ala Lys Ser Gly Val Gly Thr Ala Leu Leu Lys Leu Ala Gln Met  
420 425 430

Phe Ser Asp Met Val Leu Lys Asp Gly Phe Gln Pro Ser Arg Ser Ile  
435 440 445

Ile Phe Ala Ser Trp Ser Ala Gly Asp Phe Gly Ser Val Gly Ala Thr  
450 455 460

Glu Trp Leu Glu Gly Tyr Leu Ser Ser Leu His Leu Lys Ala Phe Thr  
465 470 475 480

Tyr Ile Asn Leu Asp Lys Ala Val Leu Gly Thr Ser Asn Phe Lys Val  
485 490 495

Ser Ala Ser Pro Leu Leu Tyr Thr Leu Ile Glu Lys Thr Met Gln Asn  
500 505 510

Val Lys His Pro Val Thr Gly Gln Phe Leu Tyr Gln Asp Ser Asn Trp  
515 520 525

Ala Ser Lys Val Glu Lys Leu Thr Leu Asp Asn Ala Ala Phe Pro Phe  
530 535 540

Leu Ala Tyr Ser Gly Ile Pro Ala Val Ser Phe Cys Phe Cys Glu Asp  
545 550 555 560

Thr Asp Tyr Pro Tyr Leu Gly Thr Thr Met Asp Thr Tyr Lys Glu Leu  
565 570 575

Ile Glu Arg Ile Pro Glu Leu Asn Lys Val Ala Arg Ala Ala Glu

580					585					590					
Val	Ala	Gly	Gln	Phe	Val	Ile	Lys	Leu	Thr	His	Asp	Val	Glu	Leu	Asn
		595					600					605			
Leu	Asp	Tyr	Glu	Arg	Tyr	Asn	Ser	Gln	Leu	Leu	Ser	Phe	Val	Arg	Asp
	610					615					620				
Leu	Asn	Gln	Tyr	Arg	Ala	Asp	Ile	Lys	Glu	Met	Gly	Leu	Ser	Leu	Gln
	625					630					635				640
Trp	Leu	Tyr	Ser	Ala	Arg	Gly	Asp	Phe	Phe	Arg	Ala	Thr	Ser	Arg	Leu
				645					650					655	
Thr	Thr	Asp	Phe	Gly	Asn	Ala	Glu	Lys	Thr	Asp	Arg	Phe	Val	Met	Lys
			660					665					670		
Lys	Leu	Asn	Asp	Arg	Val	Met	Arg	Val	Glu	Tyr	His	Phe	Leu	Ser	Pro
		675					680					685			
Tyr	Val	Ser	Pro	Lys	Glu	Ser	Pro	Phe	Arg	His	Val	Phe	Trp	Gly	Ser
	690					695					700				
Gly	Ser	His	Thr	Leu	Pro	Ala	Leu	Leu	Glu	Asn	Leu	Lys	Leu	Arg	Lys
	705					710					715				720
Gln	Asn	Asn	Gly	Ala	Phe	Asn	Glu	Thr	Leu	Phe	Arg	Asn	Gln	Leu	Ala
			725						730					735	
Leu	Ala	Thr	Trp	Thr	Ile	Gln	Gly	Ala	Ala	Asn	Ala	Leu	Ser	Gly	Asp
			740					745					750		
Val	Trp	Asp	Ile	Asp	Asn	Glu	Phe								
		755				760									
<p>&lt;210&gt; 9</p> <p>&lt;211&gt; 760</p> <p>&lt;212&gt; PRT</p> <p>&lt;213&gt; Homo sapiens</p> <p>&lt;400&gt; 9</p>															
Met	Met	Asp	Gln	Ala	Arg	Ser	Ala	Phe	Ser	Asn	Leu	Phe	Gly	Gly	Glu
1				5					10					15	
Pro	Leu	Ser	Tyr	Thr	Arg	Phe	Ser	Leu	Ala	Arg	Gln	Val	Asp	Gly	Asp
			20					25					30		



Asn Ser His Val Glu Met Lys Leu Ala Val Asp Glu Glu Glu Asn Ala  
35 40 45

Asp Asn Asn Thr Lys Ala Asn Val Thr Lys Pro Lys Arg Cys Ser Gly  
50 55 60

Ser Ile Cys Tyr Gly Thr Ile Ala Val Ile Val Phe Phe Leu Ile Gly  
65 70 75 80

Phe Met Ile Gly Tyr Leu Gly Tyr Cys Lys Gly Val Glu Pro Lys Thr  
85 90 95

Glu Cys Glu Arg Leu Ala Gly Thr Glu Ser Pro Val Arg Glu Glu Pro  
100 105 110

Gly Glu Asp Phe Pro Ala Ala Arg Arg Leu Tyr Trp Asp Asp Leu Lys  
115 120 125

Arg Lys Leu Ser Glu Lys Leu Asp Ser Thr Asp Phe Thr Ser Thr Ile  
130 135 140

Lys Leu Leu Asn Glu Asn Ser Tyr Val Pro Arg Glu Ala Gly Ser Gln  
145 150 155 160

Lys Asp Glu Asn Leu Ala Leu Tyr Val Glu Asn Gln Phe Arg Glu Phe  
165 170 175

Lys Leu Ser Lys Val Trp Arg Asp Gln His Phe Val Lys Ile Gln Val  
180 185 190

Lys Asp Ser Ala Gln Asn Ser Val Ile Ile Val Asp Lys Asn Gly Arg  
195 200 205

Leu Val Tyr Leu Val Glu Asn Pro Gly Gly Tyr Val Ala Tyr Ser Lys  
210 215 220

Ala Ala Thr Val Thr Gly Lys Leu Val His Ala Asn Phe Gly Thr Lys  
225 230 235 240

Lys Asp Phe Glu Asp Leu Tyr Thr Pro Val Asn Gly Ser Ile Val Ile  
245 250 255

Val Arg Ala Gly Lys Ile Thr Phe Ala Glu Lys Val Ala Asn Ala Glu  
260 265 270

Ser Leu Asn Ala Ile Gly Val Leu Ile Tyr Met Asp Gln Thr Lys Phe  
275 280 285

Pro Ile Val Asn Ala Glu Leu Ser Phe Phe Gly His Ala His Leu Gly  
290 295 300

Thr Gly Asp Pro Tyr Thr Pro Gly Phe Pro Ser Phe Asn His Thr Gln  
305 310 315 320

Phe Pro Pro Ser Arg Ser Ser Gly Leu Pro Asn Ile Pro Val Gln Thr  
325 330 335

Ile Ser Arg Ala Ala Ala Glu Lys Leu Phe Gly Asn Met Glu Gly Asp  
340 345 350

Cys Pro Ser Asp Trp Lys Thr Asp Ser Thr Cys Arg Met Val Thr Ser  
355 360 365

Glu Ser Lys Asn Val Lys Leu Thr Val Ser Asn Val Leu Lys Glu Ile  
370 375 380

Lys Ile Leu Asn Ile Phe Gly Val Ile Lys Gly Phe Val Glu Pro Asp  
385 390 395 400

His Tyr Val Val Val Gly Ala Gln Arg Asp Ala Trp Gly Pro Gly Ala  
405 410 415

Ala Lys Ser Gly Val Gly Thr Ala Leu Leu Leu Lys Leu Ala Gln Met  
420 425 430

Phe Ser Asp Met Val Leu Lys Asp Gly Phe Gln Pro Ser Arg Ser Ile  
435 440 445

Ile Phe Ala Ser Trp Ser Ala Gly Asp Phe Gly Ser Val Gly Ala Thr  
450 455 460

Glu Trp Leu Glu Gly Tyr Leu Ser Ser Leu His Leu Lys Ala Phe Thr  
465 470 475 480

Tyr Ile Asn Leu Asp Lys Ala Val Leu Gly Thr Ser Asn Phe Lys Val  
485 490 495

Ser Ala Ser Pro Leu Leu Tyr Thr Leu Ile Glu Lys Thr Met Gln Asn  
500 505 510

Val Lys His Pro Val Thr Gly Gln Phe Leu Tyr Gln Asp Ser Asn Trp

515	520	525
Ala Ser Lys Val Glu Lys Leu Thr Leu Asp Asn Ala Ala Phe Pro Phe 530 535 540		
Leu Ala Tyr Ser Gly Ile Pro Ala Val Ser Phe Cys Phe Cys Glu Asp 545 550 555 560		
Thr Asp Tyr Pro Tyr Leu Gly Thr Thr Met Asp Thr Tyr Lys Glu Leu 565 570 575		
Ile Glu Arg Ile Pro Glu Leu Asn Lys Val Ala Arg Ala Ala Ala Glu 580 585 590		
Val Ala Gly Gln Phe Val Ile Lys Leu Thr His Asp Val Glu Leu Asn 595 600 605		
Leu Asp Tyr Glu Arg Tyr Asn Ser Gln Leu Leu Ser Phe Val Arg Asp 610 615 620		
Leu Asn Gln Tyr Arg Ala Asp Ile Lys Glu Met Gly Leu Ser Leu Gln 625 630 635 640		
Trp Leu Tyr Ser Ala Arg Gly Asp Phe Phe Arg Ala Thr Ser Arg Leu 645 650 655		
Thr Thr Asp Phe Gly Asn Ala Glu Lys Thr Asp Arg Phe Val Met Lys 660 665 670		
Lys Leu Asn Asp Arg Val Met Arg Val Glu Tyr His Phe Leu Ser Pro 675 680 685		
Tyr Val Ser Pro Lys Glu Ser Pro Phe Arg His Val Phe Trp Gly Ser 690 695 700		
Gly Ser His Thr Leu Pro Ala Leu Leu Glu Asn Leu Lys Leu Arg Lys 705 710 715 720		
Gln Asn Asn Gly Ala Phe Asn Glu Thr Leu Phe Arg Asn Gln Leu Ala 725 730 735		
Leu Ala Thr Trp Thr Ile Gln Gly Ala Ala Asn Ala Leu Ser Gly Asp 740 745 750		
Val Trp Asp Ile Asp Asn Glu Phe 755 760		

<210> 10  
 <211> 760  
 <212> PRT  
 <213> Homo sapiens

<400> 10

Met Met Asp Gln Ala Arg Ser Ala Phe Ser Asn Leu Phe Gly Gly Glu  
 1 5 10 15

Pro Leu Ser Tyr Thr Arg Phe Ser Leu Ala Arg Gln Val Asp Gly Asp  
 20 25 30

Asn Ser His Val Glu Met Lys Leu Ala Val Asp Glu Glu Glu Asn Ala  
 35 40 45

Asp Asn Asn Thr Lys Ala Asn Val Thr Lys Pro Lys Arg Cys Ser Gly  
 50 55 60

Ser Ile Cys Tyr Gly Thr Ile Ala Val Ile Val Phe Phe Leu Ile Gly  
 65 70 75 80

Phe Met Ile Gly Tyr Leu Gly Tyr Cys Lys Gly Val Glu Pro Lys Thr  
 85 90 95

Glu Cys Glu Arg Leu Ala Gly Thr Glu Ser Pro Val Arg Glu Glu Pro  
 100 105 110

Gly Glu Asp Phe Pro Ala Ala Arg Arg Leu Tyr Trp Asp Asp Leu Lys  
 115 120 125

Arg Lys Leu Ser Glu Lys Leu Asp Ser Thr Asp Phe Thr Ser Thr Ile  
 130 135 140

Lys Leu Leu Asn Glu Asn Ser Tyr Val Pro Arg Glu Ala Gly Ser Gln  
 145 150 155 160

Lys Asp Glu Asn Leu Ala Leu Tyr Val Glu Asn Gln Phe Arg Glu Phe  
 165 170 175

Lys Leu Ser Lys Val Trp Arg Asp Gln His Phe Val Lys Ile Gln Val  
 180 185 190

Lys Asp Ser Ala Gln Asn Ser Val Ile Ile Val Asp Lys Asn Gly Arg  
 195 200 205

Leu Val Tyr Leu Val Glu Asn Pro Gly Gly Tyr Val Ala Tyr Ser Lys  
210 215 220

Ala Ala Thr Val Thr Gly Lys Leu Val His Ala Asn Phe Gly Thr Lys  
225 230 235 240

Lys Asp Phe Glu Asp Leu Tyr Thr Pro Val Asn Gly Ser Ile Val Ile  
245 250 255

Val Arg Ala Gly Lys Ile Thr Phe Ala Glu Lys Val Ala Asn Ala Glu  
260 265 270

Ser Leu Asn Ala Ile Gly Val Leu Ile Tyr Met Asp Gln Thr Lys Phe  
275 280 285

Pro Ile Val Asn Ala Glu Leu Ser Phe Phe Gly His Ala His Leu Gly  
290 295 300

Thr Gly Asp Pro Tyr Thr Pro Gly Phe Pro Ser Phe Asn His Thr Gln  
305 310 315 320

Phe Pro Pro Ser Arg Ser Ser Gly Leu Pro Asn Ile Pro Val Gln Thr  
325 330 335

Ile Ser Arg Ala Ala Ala Glu Lys Leu Phe Gly Asn Met Glu Gly Asp  
340 345 350

Cys Pro Ser Asp Trp Lys Thr Asp Ser Thr Cys Arg Met Val Thr Ser  
355 360 365

Glu Ser Lys Asn Val Lys Leu Thr Val Ser Asn Val Leu Lys Glu Ile  
370 375 380

Lys Ile Leu Asn Ile Phe Gly Val Ile Lys Gly Phe Val Glu Pro Asp  
385 390 395 400

His Tyr Val Val Val Gly Ala Gln Arg Asp Ala Trp Gly Pro Gly Ala  
405 410 415

Ala Lys Ser Gly Val Gly Thr Ala Leu Leu Leu Lys Leu Ala Gln Met  
420 425 430

Phe Ser Asp Met Val Leu Lys Asp Gly Phe Gln Pro Ser Arg Ser Ile  
435 440 445

Ile Phe Ala Ser Trp Ser Ala Gly Asp Phe Gly Ser Val Gly Ala Thr

450	455	460
Glu Trp Leu Glu Gly Tyr Leu Ser Ser Leu His Leu Lys Ala Phe Thr 465 470 475 480		
Tyr Ile Asn Leu Asp Lys Ala Val Leu Gly Thr Ser Asn Phe Lys Val 485 490 495		
Ser Ala Ser Pro Leu Leu Tyr Thr Leu Ile Glu Lys Thr Met Gln Asn 500 505 510		
Val Lys His Pro Val Thr Gly Gln Phe Leu Tyr Gln Asp Ser Asn Trp 515 520 525		
Ala Ser Lys Val Glu Lys Leu Thr Leu Asp Asn Ala Ala Phe Pro Phe 530 535 540		
Leu Ala Tyr Ser Gly Ile Pro Ala Val Ser Phe Cys Phe Cys Glu Asp 545 550 555 560		
Thr Asp Tyr Pro Tyr Leu Gly Thr Thr Met Asp Thr Tyr Lys Glu Leu 565 570 575		
Ile Glu Arg Ile Pro Glu Leu Asn Lys Val Ala Arg Ala Ala Glu 580 585 590		
Val Ala Gly Gln Phe Val Ile Lys Leu Thr His Asp Val Glu Leu Asn 595 600 605		
Leu Asp Tyr Glu Arg Tyr Asn Ser Gln Leu Leu Ser Phe Val Arg Asp 610 615 620		
Leu Asn Gln Tyr Arg Ala Asp Ile Lys Glu Met Gly Leu Ser Leu Gln 625 630 635 640		
Trp Leu Tyr Ser Ala Arg Gly Asp Phe Phe Arg Ala Thr Ser Arg Leu 645 650 655		
Thr Thr Asp Phe Gly Asn Ala Glu Lys Thr Asp Arg Phe Val Met Lys 660 665 670		
Lys Leu Asn Asp Arg Val Met Arg Val Glu Tyr His Phe Leu Ser Pro 675 680 685		
Tyr Val Ser Pro Lys Glu Ser Pro Phe Arg His Val Phe Trp Gly Ser 690 695 700		

Gly Ser His Thr Leu Pro Ala Leu Leu Glu Asn Leu Lys Leu Arg Lys  
705 710 715 720

Gln Asn Asn Gly Ala Phe Asn Glu Thr Leu Phe Arg Asn Gln Leu Ala  
725 730 735

Leu Ala Thr Trp Thr Ile Gln Gly Ala Ala Asn Ala Leu Ser Gly Asp  
740 745 750

Val Trp Asp Ile Asp Asn Glu Phe  
755 760

<210> 11  
<211> 640  
<212> PRT  
<213> Homo sapiens

<400> 11

Arg Leu Tyr Trp Asp Asp Leu Lys Arg Lys Leu Ser Glu Lys Leu Asp  
1 5 10 15

Ser Thr Asp Phe Thr Ser Thr Ile Lys Leu Leu Asn Glu Asn Ser Tyr  
20 25 30

Val Pro Arg Glu Ala Gly Ser Gln Lys Asp Glu Asn Leu Ala Leu Tyr  
35 40 45

Val Glu Asn Gln Phe Arg Glu Phe Lys Leu Ser Lys Val Trp Arg Asp  
50 55 60

Gln His Phe Val Lys Ile Gln Val Lys Asp Ser Ala Gln Asn Ser Val  
65 70 75 80

Ile Ile Val Asp Lys Asn Gly Arg Leu Val Tyr Leu Val Glu Asn Pro  
85 90 95

Gly Gly Tyr Val Ala Tyr Ser Lys Ala Ala Thr Val Thr Gly Lys Leu  
100 105 110

Val His Ala Asn Phe Gly Thr Lys Lys Asp Phe Glu Asp Leu Tyr Thr  
115 120 125

Pro Val Asn Gly Ser Ile Val Ile Val Arg Ala Gly Lys Ile Thr Phe  
130 135 140

Ala Glu Lys Val Ala Asn Ala Glu Ser Leu Asn Ala Ile Gly Val Leu  
145 150 155 160

Ile Tyr Met Asp Gln Thr Lys Phe Pro Ile Val Asn Ala Glu Leu Ser  
165 170 175

Phe Phe Gly His Ala His Leu Gly Thr Gly Asp Pro Tyr Thr Pro Gly  
180 185 190

Phe Pro Ser Phe Asn His Thr Gln Phe Pro Pro Ser Arg Ser Ser Gly  
195 200 205

Leu Pro Asn Ile Pro Val Gln Thr Ile Ser Arg Ala Ala Ala Glu Lys  
210 215 220

Leu Phe Gly Asn Met Glu Gly Asp Cys Pro Ser Asp Trp Lys Thr Asp  
225 230 235 240

Ser Thr Cys Arg Met Val Thr Ser Glu Ser Lys Asn Val Lys Leu Thr  
245 250 255

Val Ser Asn Val Leu Lys Glu Ile Lys Ile Leu Asn Ile Phe Gly Val  
260 265 270

Ile Lys Gly Phe Val Glu Pro Asp His Tyr Val Val Val Gly Ala Gln  
275 280 285

Arg Asp Ala Trp Gly Pro Gly Ala Ala Lys Ser Gly Val Gly Thr Ala  
290 295 300

Leu Leu Leu Lys Leu Ala Gln Met Phe Ser Asp Met Val Leu Lys Asp  
305 310 315 320

Gly Phe Gln Pro Ser Arg Ser Ile Ile Phe Ala Ser Trp Ser Ala Gly  
325 330 335

Asp Phe Gly Ser Val Gly Ala Thr Glu Trp Leu Glu Gly Tyr Leu Ser  
340 345 350

Ser Leu His Leu Lys Ala Phe Thr Tyr Ile Asn Leu Asp Lys Ala Val  
355 360 365

Leu Gly Thr Ser Asn Phe Lys Val Ser Ala Ser Pro Leu Leu Tyr Thr  
370 375 380

Leu Ile Glu Lys Thr Met Gln Asn Val Lys His Pro Val Thr Gly Gln



385					390					395				400	
Phe	Leu	Tyr	Gln	Asp	Ser	Asn	Trp	Ala	Ser	Lys	Val	Glu	Lys	Leu	Thr
				405					410					415	
Leu	Asp	Asn	Ala	Ala	Phe	Pro	Phe	Leu	Ala	Tyr	Ser	Gly	Ile	Pro	Ala
			420					425					430		
Val	Ser	Phe	Cys	Phe	Cys	Glu	Asp	Thr	Asp	Tyr	Pro	Tyr	Leu	Gly	Thr
		435					440					445			
Thr	Met	Asp	Thr	Tyr	Lys	Glu	Leu	Ile	Glu	Arg	Ile	Pro	Glu	Leu	Asn
	450					455					460				
Lys	Val	Ala	Arg	Ala	Ala	Ala	Glu	Val	Ala	Gly	Gln	Phe	Val	Ile	Lys
465					470					475					480
Leu	Thr	His	Asp	Val	Glu	Leu	Asn	Leu	Asp	Tyr	Glu	Arg	Tyr	Asn	Ser
				485					490					495	
Gln	Leu	Leu	Ser	Phe	Val	Arg	Asp	Leu	Asn	Gln	Tyr	Arg	Ala	Asp	Ile
			500					505					510		
Lys	Glu	Met	Gly	Leu	Ser	Leu	Gln	Trp	Leu	Tyr	Ser	Ala	Arg	Gly	Asp
		515					520					525			
Phe	Phe	Arg	Ala	Thr	Ser	Arg	Leu	Thr	Thr	Asp	Phe	Gly	Asn	Ala	Glu
	530					535					540				
Lys	Thr	Asp	Arg	Phe	Val	Met	Lys	Lys	Leu	Asn	Asp	Arg	Val	Met	Arg
545					550					555					560
Val	Glu	Tyr	His	Phe	Leu	Ser	Pro	Tyr	Val	Ser	Pro	Lys	Glu	Ser	Pro
				565					570					575	
Phe	Arg	His	Val	Phe	Trp	Gly	Ser	Gly	Ser	His	Thr	Leu	Pro	Ala	Leu
			580					585					590		
Leu	Glu	Asn	Leu	Lys	Leu	Arg	Lys	Gln	Asn	Asn	Gly	Ala	Phe	Asn	Glu
		595					600					605			
Thr	Leu	Phe	Arg	Asn	Gln	Leu	Ala	Leu	Ala	Thr	Trp	Thr	Ile	Gln	Gly
	610					615					620				
Ala	Ala	Asn	Ala	Leu	Ser	Gly	Asp	Val	Trp	Asp	Ile	Asp	Asn	Glu	Phe
625					630					635					640

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<212> PRT  
<213> Homo sapiens

<400> 12

Arg Leu Tyr Trp Asp Asp Leu Lys Arg Lys Leu Ser Glu Lys Leu Asp  
1 5 10 15

Ser Thr Asp Phe Thr Ser Thr Ile Lys Leu Leu Asn Glu Asn Ser Tyr  
20 25 30

Val Pro Arg Glu Ala Gly Ser Gln Lys Asp Glu Asn Leu Ala Leu Tyr  
35 40 45

Val Glu Asn Gln Phe Arg Glu Phe Lys Leu Ser Lys Val Trp Arg Asp  
50 55 60

Gln His Phe Val Lys Ile Gln Val Lys Asp Ser Ala Gln Asn Ser Val  
65 70 75 80

Ile Ile Val Asp Lys Asn Gly Arg Leu Val Tyr Leu Val Glu Asn Pro  
85 90 95

Gly Gly Tyr Val Ala Tyr Ser Lys Ala Ala Thr Val Thr Gly Lys Leu  
100 105 110

Val His Ala Asn Phe Gly Thr Lys Lys Asp Phe Glu Asp Leu Tyr Thr  
115 120 125

Pro Val Asn Gly Ser Ile Val Ile Val Arg Ala Gly Lys Ile Thr Phe  
130 135 140

Ala Glu Lys Val Ala Asn Ala Glu Ser Leu Asn Ala Ile Gly Val Leu  
145 150 155 160

Ile Tyr Met Asp Gln Thr Lys Phe Pro Ile Val Asn Ala Glu Leu Ser  
165 170 175

Phe Phe Gly His Ala His Leu Gly Thr Gly Asp Pro Tyr Thr Pro Gly  
180 185 190

Phe Pro Ser Phe Asn His Thr Gln Phe Pro Pro Ser Arg Ser Ser Gly  
195 200 205

Leu Pro Asn Ile Pro Val Gln Thr Ile Ser Arg Ala Ala Ala Glu Lys  
210 215 220

Leu Phe Gly Asn Met Glu Gly Asp Cys Pro Ser Asp Trp Lys Thr Asp  
225 230 235 240

Ser Thr Cys Arg Met Val Thr Ser Glu Ser Lys Asn Val Lys Leu Thr  
245 250 255

Val Ser Asn Val Leu Lys Glu Ile Lys Ile Leu Asn Ile Phe Gly Val  
260 265 270

Ile Lys Gly Phe Val Glu Pro Asp His Tyr Val Val Val Gly Ala Gln  
275 280 285

Arg Asp Ala Trp Gly Pro Gly Ala Ala Lys Ser Gly Val Gly Thr Ala  
290 295 300

Leu Leu Leu Lys Leu Ala Gln Met Phe Ser Asp Met Val Leu Lys Asp  
305 310 315 320

Gly Phe Gln Pro Ser Arg Ser Ile Ile Phe Ala Ser Trp Ser Ala Gly  
325 330 335

Asp Phe Gly Ser Val Gly Ala Thr Glu Trp Leu Glu Gly Tyr Leu Ser  
340 345 350

Ser Leu His Leu Lys Ala Phe Thr Tyr Ile Asn Leu Asp Lys Ala Val  
355 360 365

Leu Gly Thr Ser Asn Phe Lys Val Ser Ala Ser Pro Leu Leu Tyr Thr  
370 375 380

Leu Ile Glu Lys Thr Met Gln Asn Val Lys His Pro Val Thr Gly Gln  
385 390 395 400

Phe Leu Tyr Gln Asp Ser Asn Trp Ala Ser Lys Val Glu Lys Leu Thr  
405 410 415

Leu Asp Asn Ala Ala Phe Pro Phe Leu Ala Tyr Ser Gly Ile Pro Ala  
420 425 430

Val Ser Phe Cys Phe Cys Glu Asp Thr Asp Tyr Pro Tyr Leu Gly Thr  
435 440 445

Thr Met Asp Thr Tyr Lys Glu Leu Ile Glu Arg Ile Pro Glu Leu Asn

450		455		460
Lys Val Ala Arg Ala Ala Ala Glu Val Ala Gly Gln Phe Val Ile Lys				
465		470		475
				480
Leu Thr His Asp Val Glu Leu Asn Leu Asp Tyr Glu Arg Tyr Asn Ser				
	485		490	495
Gln Leu Leu Ser Phe Val Arg Asp Leu Asn Gln Tyr Arg Ala Asp Ile				
	500		505	510
Lys Glu Met Gly Leu Ser Leu Gln Trp Leu Tyr Ser Ala Arg Gly Asp				
	515		520	525
Phe Phe Arg Ala Thr Ser Arg Leu Thr Thr Asp Phe Gly Asn Ala Glu				
	530		535	540
Lys Thr Asp Arg Phe Val Met Lys Lys Leu Asn Asp Arg Val Met Arg				
545		550		555
				560
Val Glu Tyr His Phe Leu Ser Pro Tyr Val Ser Pro Lys Glu Ser Pro				
	565		570	575
Phe Arg His Val Phe Trp Gly Ser Gly Ser His Thr Leu Pro Ala Leu				
	580		585	590
Leu Glu Asn Leu Lys Leu Arg Lys Gln Asn Asn Gly Ala Phe Asn Glu				
	595		600	605
Thr Leu Phe Arg Asn Gln Leu Ala Leu Ala Thr Trp Thr Ile Gln Gly				
	610		615	620
Ala Ala Asn Ala Leu Ser Gly Asp Val Trp Asp Ile Asp Asn Glu Phe				
625		630		635
				640
<210> 13				
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<212> PRT				
<213> Homo sapiens				
<400> 13				
Arg Leu Tyr Trp Asp Asp Leu Lys Arg Lys Leu Ser Glu Lys Leu Asp				
1		5		10
				15
Ser Thr Asp Phe Thr Ser Thr Ile Lys Leu Leu Asn Glu Asn Ser Tyr				
	20		25	30

Val Pro Arg Glu Ala Gly Ser Gln Lys Asp Glu Asn Leu Ala Leu Tyr  
35 40 45

Val Glu Asn Gln Phe Arg Glu Phe Lys Leu Ser Lys Val Trp Arg Asp  
50 55 60

Gln His Phe Val Lys Ile Gln Val Lys Asp Ser Ala Gln Asn Ser Val  
65 70 75 80

Ile Ile Val Asp Lys Asn Gly Arg Leu Val Tyr Leu Val Glu Asn Pro  
85 90 95

Gly Gly Tyr Val Ala Tyr Ser Lys Ala Ala Thr Val Thr Gly Lys Leu  
100 105 110

Val His Ala Asn Phe Gly Thr Lys Lys Asp Phe Glu Asp Leu Tyr Thr  
115 120 125

Pro Val Asn Gly Ser Ile Val Ile Val Arg Ala Gly Lys Ile Thr Phe  
130 135 140

Ala Glu Lys Val Ala Asn Ala Glu Ser Leu Asn Ala Ile Gly Val Leu  
145 150 155 160

Ile Tyr Met Asp Gln Thr Lys Phe Pro Ile Val Asn Ala Glu Leu Ser  
165 170 175

Phe Phe Gly His Ala His Leu Gly Thr Gly Asp Pro Tyr Thr Pro Gly  
180 185 190

Phe Pro Ser Phe Asn His Thr Gln Phe Pro Pro Ser Arg Ser Ser Gly  
195 200 205

Leu Pro Asn Ile Pro Val Gln Thr Ile Ser Arg Ala Ala Ala Glu Lys  
210 215 220

Leu Phe Gly Asn Met Glu Gly Asp Cys Pro Ser Asp Trp Lys Thr Asp  
225 230 235 240

Ser Thr Cys Arg Met Val Thr Ser Glu Ser Lys Asn Val Lys Leu Thr  
245 250 255

Val Ser Asn Val Leu Lys Glu Ile Lys Ile Leu Asn Ile Phe Gly Val  
260 265 270

Ile Lys Gly Phe Val Glu Pro Asp His Tyr Val Val Val Gly Ala Gln  
275 280 285

Arg Asp Ala Trp Gly Pro Gly Ala Ala Lys Ser Gly Val Gly Thr Ala  
290 295 300

Leu Leu Leu Lys Leu Ala Gln Met Phe Ser Asp Met Val Leu Lys Asp  
305 310 315 320

Gly Phe Gln Pro Ser Arg Ser Ile Ile Phe Ala Ser Trp Ser Ala Gly  
325 330 335

Asp Phe Gly Ser Val Gly Ala Thr Glu Trp Leu Glu Gly Tyr Leu Ser  
340 345 350

Ser Leu His Leu Lys Ala Phe Thr Tyr Ile Asn Leu Asp Lys Ala Val  
355 360 365

Leu Gly Thr Ser Asn Phe Lys Val Ser Ala Ser Pro Leu Leu Tyr Thr  
370 375 380

Leu Ile Glu Lys Thr Met Gln Asn Val Lys His Pro Val Thr Gly Gln  
385 390 395 400

Phe Leu Tyr Gln Asp Ser Asn Trp Ala Ser Lys Val Glu Lys Leu Thr  
405 410 415

Leu Asp Asn Ala Ala Phe Pro Phe Leu Ala Tyr Ser Gly Ile Pro Ala  
420 425 430

Val Ser Phe Cys Phe Cys Glu Asp Thr Asp Tyr Pro Tyr Leu Gly Thr  
435 440 445

Thr Met Asp Thr Tyr Lys Glu Leu Ile Glu Arg Ile Pro Glu Leu Asn  
450 455 460

Lys Val Ala Arg Ala Ala Ala Glu Val Ala Gly Gln Phe Val Ile Lys  
465 470 475 480

Leu Thr His Asp Val Glu Leu Asn Leu Asp Tyr Glu Arg Tyr Asn Ser  
485 490 495

Gln Leu Leu Ser Phe Val Arg Asp Leu Asn Gln Tyr Arg Ala Asp Ile  
500 505 510

Lys Glu Met Gly Leu Ser Leu Gln Trp Leu Tyr Ser Ala Arg Gly Asp

515		520		525
Phe Phe Arg Ala Thr Ser Arg Leu Thr Thr Asp Phe Gly Asn Ala Glu				
530		535		540
Lys Thr Asp Arg Phe Val Met Lys Lys Leu Asn Asp Arg Val Met Arg				
545		550		555
Val Glu Tyr His Phe Leu Ser Pro Tyr Val Ser Pro Lys Glu Ser Pro				
	565		570	575
Phe Arg His Val Phe Trp Gly Ser Gly Ser His Thr Leu Pro Ala Leu				
	580		585	590
Leu Glu Asn Leu Lys Leu Arg Lys Gln Asn Asn Gly Ala Phe Asn Glu				
	595		600	605
Thr Leu Phe Arg Asn Gln Leu Ala Leu Ala Thr Trp Thr Ile Gln Gly				
610		615		620
Ala Ala Asn Ala Leu Ser Gly Asp Val Trp Asp Ile Asp Asn Glu Phe				
625		630		635
640				
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<213> Homo sapiens				
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Leu Tyr Trp Asp Asp Leu Lys Arg Lys Leu Ser Glu Lys Leu Asp Ser				
1	5		10	15
Thr Asp Phe Thr Ser Thr Ile Lys Leu Leu Asn Glu Asn Ser Tyr Val				
	20		25	30
Pro Arg Glu Ala Gly Ser Gln Lys Asp Glu Asn Leu Ala Leu Tyr Val				
	35		40	45
Glu Asn Glu Phe Arg Glu Phe Lys Leu Ser Lys Val Trp Arg Asp Gln				
50		55		60
His Phe Val Lys Ile Gln Val Lys Asp Ser Ala Gln Asn Ser Val Ile				
65		70		75
				80
Ile Val Asp Lys Asn Gly Arg Leu Val Tyr Leu Val Glu Asn Pro Gly				
	85		90	95

Gly Tyr Val Ala Tyr Ser Lys Ala Ala Thr Val Thr Gly Lys Leu Val  
100 105 110

His Ala Asn Phe Gly Thr Lys Lys Asp Phe Glu Asp Leu Tyr Thr Pro  
115 120 125

Val Asn Gly Ser Ile Val Ile Val Arg Ala Gly Lys Ile Thr Phe Ala  
130 135 140

Glu Lys Val Ala Asn Ala Glu Ser Leu Asn Ala Ile Gly Val Leu Ile  
145 150 155 160

Tyr Met Asp Gln Thr Lys Phe Pro Ile Val Asn Ala Glu Leu Ser Phe  
165 170 175

Phe Gly His Ala His Leu Gly Thr Gly Asp Pro Tyr Thr Pro Gly Phe  
180 185 190

Pro Ser Phe Asn His Thr Gln Phe Pro Pro Ser Arg Ser Ser Gly Leu  
195 200 205

Pro Asn Ile Pro Val Gln Thr Ile Ser Arg Ala Ala Ala Glu Lys Leu  
210 215 220

Phe Gly Asn Met Glu Gly Asp Cys Pro Ser Asp Trp Lys Thr Asp Ser  
225 230 235 240

Thr Cys Arg Met Val Thr Ser Glu Ser Lys Asn Val Lys Leu Thr Val  
245 250 255

Ser Asn Val Leu Lys Glu Ile Lys Ile Leu Asn Ile Phe Gly Val Ile  
260 265 270

Lys Gly Phe Val Glu Pro Asp His Tyr Val Val Val Gly Ala Gln Arg  
275 280 285

Asp Ala Trp Gly Pro Gly Ala Ala Lys Ser Gly Val Gly Thr Ala Leu  
290 295 300

Leu Leu Lys Leu Ala Gln Met Phe Ser Asp Met Val Leu Lys Asp Gly  
305 310 315 320

Phe Gln Pro Ser Arg Ser Ile Ile Phe Ala Ser Trp Ser Ala Gly Asp  
325 330 335



Phe Gly Ser Val Gly Ala Thr Glu Trp Leu Glu Gly Tyr Leu Ser Ser  
340 345 350

Leu His Leu Lys Ala Phe Thr Tyr Ile Asn Leu Asp Lys Ala Val Leu  
355 360 365

Gly Thr Ser Asn Phe Lys Val Ser Ala Ser Pro Leu Leu Tyr Thr Leu  
370 375 380

Ile Glu Lys Thr Met Gln Asn Val Lys His Pro Val Thr Gly Gln Phe  
385 390 395 400

Leu Tyr Gln Asp Ser Asn Trp Ala Ser Lys Val Glu Lys Leu Thr Leu  
405 410 415

Asp Asn Ala Ala Phe Pro Phe Leu Ala Tyr Ser Gly Ile Pro Ala Val  
420 425 430

Ser Phe Cys Phe Cys Glu Asp Thr Asp Tyr Pro Tyr Leu Gly Thr Thr  
435 440 445

Met Asp Thr Tyr Lys Glu Leu Ile Glu Arg Ile Pro Glu Leu Asn Lys  
450 455 460

Val Ala Arg Ala Ala Ala Glu Val Ala Gly Gln Phe Val Ile Lys Leu  
465 470 475 480

Thr His Asp Val Glu Leu Asn Leu Asp Tyr Glu Glu Tyr Asn Ser Gln  
485 490 495

Leu Leu Ser Phe Val Arg Asp Leu Asn Gln Tyr Arg Ala Asp Ile Lys  
500 505 510

Glu Met Gly Leu Ser Leu Gln Trp Leu Tyr Ser Ala Arg Gly Asp Phe  
515 520 525

Phe Arg Ala Thr Ser Arg Leu Thr Thr Asp Phe Gly Asn Ala Glu Lys  
530 535 540

Thr Asp Arg Phe Val Met Lys Lys Leu Asn Asp Arg Val Met Arg Val  
545 550 555 560

Glu Tyr His Phe Leu Ser Pro Tyr Val Ser Pro Lys Glu Ser Pro Phe  
565 570 575

Arg His Val Phe Trp Gly Ser Gly Ser His Thr Leu Pro Ala Leu Leu

580 585 590

Glu Asn Leu Lys Leu Arg Lys Gln Asn Asn Gly Ala Phe Asn Glu Thr  
595 600 605

Leu Phe Arg Asn Gln Leu Ala Leu Ala Thr Trp Thr Ile Gln Gly Ala  
610 615 620

Ala Asn Ala Leu Ser Gly Asp Val Trp Asp Ile Asp Asn Glu Phe  
625 630 635

<210> 15  
<211> 639  
<212> PRT  
<213> Homo sapiens

<400> 15

Leu Tyr Trp Asp Asp Leu Lys Arg Lys Leu Ser Glu Lys Leu Asp Ser  
1 5 10 15

Thr Asp Phe Thr Ser Thr Ile Lys Leu Leu Asn Glu Asn Ser Tyr Val  
20 25 30

Pro Arg Glu Ala Gly Ser Gln Lys Asp Glu Asn Leu Ala Leu Tyr Val  
35 40 45

Glu Asn Glu Phe Arg Glu Phe Lys Leu Ser Lys Val Trp Arg Asp Gln  
50 55 60

His Phe Val Lys Ile Gln Val Lys Asp Ser Ala Gln Asn Ser Val Ile  
65 70 75 80

Ile Val Asp Lys Asn Gly Arg Leu Val Tyr Leu Val Glu Asn Pro Gly  
85 90 95

Gly Tyr Val Ala Tyr Ser Lys Ala Ala Thr Val Thr Gly Lys Leu Val  
100 105 110

His Ala Asn Phe Gly Thr Lys Lys Asp Phe Glu Asp Leu Tyr Thr Pro  
115 120 125

Val Asn Gly Ser Ile Val Ile Val Arg Ala Gly Lys Ile Thr Phe Ala  
130 135 140

Glu Lys Val Ala Asn Ala Glu Ser Leu Asn Ala Ile Gly Val Leu Ile  
145 150 155 160

Tyr Met Asp Gln Thr Lys Phe Pro Ile Val Asn Ala Glu Leu Ser Phe  
165 170 175

Phe Gly His Ala His Leu Gly Thr Gly Asp Pro Tyr Thr Pro Gly Phe  
180 185 190

Pro Ser Phe Asn His Thr Gln Phe Pro Pro Ser Arg Ser Ser Gly Leu  
195 200 205

Pro Asn Ile Pro Val Gln Thr Ile Ser Arg Ala Ala Ala Glu Lys Leu  
210 215 220

Phe Gly Asn Met Glu Gly Asp Cys Pro Ser Asp Trp Lys Thr Asp Ser  
225 230 235 240

Thr Cys Arg Met Val Thr Ser Glu Ser Lys Asn Val Lys Leu Thr Val  
245 250 255

Ser Asn Val Leu Lys Glu Ile Lys Ile Leu Asn Ile Phe Gly Val Ile  
260 265 270

Lys Gly Phe Val Glu Pro Asp His Tyr Val Val Val Gly Ala Gln Arg  
275 280 285

Asp Ala Trp Gly Pro Gly Ala Ala Lys Ser Gly Val Gly Thr Ala Leu  
290 295 300

Leu Leu Lys Leu Ala Gln Met Phe Ser Asp Met Val Leu Lys Asp Gly  
305 310 315 320

Phe Gln Pro Ser Arg Ser Ile Ile Phe Ala Ser Trp Ser Ala Gly Asp  
325 330 335

Phe Gly Ser Val Gly Ala Thr Glu Trp Leu Glu Gly Tyr Leu Ser Ser  
340 345 350

Leu His Leu Lys Ala Phe Thr Tyr Ile Asn Leu Asp Lys Ala Val Leu  
355 360 365

Gly Thr Ser Asn Phe Lys Val Ser Ala Ser Pro Leu Leu Tyr Thr Leu  
370 375 380

Ile Glu Lys Thr Met Gln Asn Val Lys His Pro Val Thr Gly Gln Phe  
385 390 395 400

Leu Tyr Gln Asp Ser Asn Trp Ala Ser Lys Val Glu Lys Leu Thr Leu  
405 410 415

Asp Asn Ala Ala Phe Pro Phe Leu Ala Tyr Ser Gly Ile Pro Ala Val  
420 425 430

Ser Phe Cys Phe Cys Glu Asp Thr Asp Tyr Pro Tyr Leu Gly Thr Thr  
435 440 445

Met Asp Thr Tyr Lys Glu Leu Ile Glu Arg Ile Pro Glu Leu Asn Lys  
450 455 460

Val Ala Arg Ala Ala Ala Glu Val Ala Gly Gln Phe Val Ile Lys Leu  
465 470 475 480

Thr His Asp Val Glu Leu Asn Leu Asp Tyr Glu Glu Tyr Asn Ser Gln  
485 490 495

Leu Leu Ser Phe Val Arg Asp Leu Asn Gln Tyr Arg Ala Asp Ile Lys  
500 505 510

Glu Met Gly Leu Ser Leu Gln Trp Leu Tyr Ser Ala Arg Gly Asp Phe  
515 520 525

Phe Arg Ala Thr Ser Arg Leu Thr Thr Asp Phe Gly Asn Ala Glu Lys  
530 535 540

Thr Asp Arg Phe Val Met Lys Lys Leu Asn Asp Arg Val Met Arg Val  
545 550 555 560

Glu Tyr His Phe Leu Ser Pro Tyr Val Ser Pro Lys Glu Ser Pro Phe  
565 570 575

Arg His Val Phe Trp Gly Ser Gly Ser His Thr Leu Pro Ala Leu Leu  
580 585 590

Glu Asn Leu Lys Leu Arg Lys Gln Asn Asn Gly Ala Phe Asn Glu Thr  
595 600 605

Leu Phe Arg Asn Gln Leu Ala Leu Ala Thr Trp Thr Ile Gln Gly Ala  
610 615 620

Ala Asn Ala Leu Ser Gly Asp Val Trp Asp Ile Asp Asn Glu Phe  
625 630 635

<211> 639  
<212> PRT  
<213> Homo sapiens

<400> 16

Leu Tyr Trp Asp Asp Leu Lys Arg Lys Leu Ser Glu Lys Leu Asp Ser  
1 5 10 15

Thr Asp Phe Thr Ser Thr Ile Lys Leu Leu Asn Glu Asn Ser Tyr Val  
20 25 30

Pro Arg Glu Ala Gly Ser Gln Lys Asp Glu Asn Leu Ala Leu Tyr Val  
35 40 45

Glu Asn Glu Phe Arg Glu Phe Lys Leu Ser Lys Val Trp Arg Asp Gln  
50 55 60

His Phe Val Lys Ile Gln Val Lys Asp Ser Ala Gln Asn Ser Val Ile  
65 70 75 80

Ile Val Asp Lys Asn Gly Arg Leu Val Tyr Leu Val Glu Asn Pro Gly  
85 90 95

Gly Tyr Val Ala Tyr Ser Lys Ala Ala Thr Val Thr Gly Lys Leu Val  
100 105 110

His Ala Asn Phe Gly Thr Lys Lys Asp Phe Glu Asp Leu Tyr Thr Pro  
115 120 125

Val Asn Gly Ser Ile Val Ile Val Arg Ala Gly Lys Ile Thr Phe Ala  
130 135 140

Glu Lys Val Ala Asn Ala Glu Ser Leu Asn Ala Ile Gly Val Leu Ile  
145 150 155 160

Tyr Met Asp Gln Thr Lys Phe Pro Ile Val Asn Ala Glu Leu Ser Phe  
165 170 175

Phe Gly His Ala His Leu Gly Thr Gly Asp Pro Tyr Thr Pro Gly Phe  
180 185 190

Pro Ser Phe Asn His Thr Gln Phe Pro Pro Ser Arg Ser Ser Gly Leu  
195 200 205

Pro Asn Ile Pro Val Gln Thr Ile Ser Arg Ala Ala Ala Glu Lys Leu  
210 215 220

Phe Gly Asn Met Glu Gly Asp Cys Pro Ser Asp Trp Lys Thr Asp Ser  
225 230 235 240

Thr Cys Arg Met Val Thr Ser Glu Ser Lys Asn Val Lys Leu Thr Val  
245 250 255

Ser Asn Val Leu Lys Glu Ile Lys Ile Leu Asn Ile Phe Gly Val Ile  
260 265 270

Lys Gly Phe Val Glu Pro Asp His Tyr Val Val Val Gly Ala Gln Arg  
275 280 285

Asp Ala Trp Gly Pro Gly Ala Ala Lys Ser Gly Val Gly Thr Ala Leu  
290 295 300

Leu Leu Lys Leu Ala Gln Met Phe Ser Asp Met Val Leu Lys Asp Gly  
305 310 315 320

Phe Gln Pro Ser Arg Ser Ile Ile Phe Ala Ser Trp Ser Ala Gly Asp  
325 330 335

Phe Gly Ser Val Gly Ala Thr Glu Trp Leu Glu Gly Tyr Leu Ser Ser  
340 345 350

Leu His Leu Lys Ala Phe Thr Tyr Ile Asn Leu Asp Lys Ala Val Leu  
355 360 365

Gly Thr Ser Asn Phe Lys Val Ser Ala Ser Pro Leu Leu Tyr Thr Leu  
370 375 380

Ile Glu Lys Thr Met Gln Asn Val Lys His Pro Val Thr Gly Gln Phe  
385 390 395 400

Leu Tyr Gln Asp Ser Asn Trp Ala Ser Lys Val Glu Lys Leu Thr Leu  
405 410 415

Asp Asn Ala Ala Phe Pro Phe Leu Ala Tyr Ser Gly Ile Pro Ala Val  
420 425 430

Ser Phe Cys Phe Cys Glu Asp Thr Asp Tyr Pro Tyr Leu Gly Thr Thr  
435 440 445

Met Asp Thr Tyr Lys Glu Leu Ile Glu Arg Ile Pro Glu Leu Asn Lys  
450 455 460

Val Ala Arg Ala Ala Ala Glu Val Ala Gly Gln Phe Val Ile Lys Leu  
465 470 475 480

Thr His Asp Val Glu Leu Asn Leu Asp Tyr Glu Glu Tyr Asn Ser Gln  
485 490 495

Leu Leu Ser Phe Val Arg Asp Leu Asn Gln Tyr Arg Ala Asp Ile Lys  
500 505 510

Glu Met Gly Leu Ser Leu Gln Trp Leu Tyr Ser Ala Arg Gly Asp Phe  
515 520 525

Phe Arg Ala Thr Ser Arg Leu Thr Thr Asp Phe Gly Asn Ala Glu Lys  
530 535 540

Thr Asp Arg Phe Val Met Lys Lys Leu Asn Asp Arg Val Met Arg Val  
545 550 555 560

Glu Tyr His Phe Leu Ser Pro Tyr Val Ser Pro Lys Glu Ser Pro Phe  
565 570 575

Arg His Val Phe Trp Gly Ser Gly Ser His Thr Leu Pro Ala Leu Leu  
580 585 590

Glu Asn Leu Lys Leu Arg Lys Gln Asn Asn Gly Ala Phe Asn Glu Thr  
595 600 605

Leu Phe Arg Asn Gln Leu Ala Leu Ala Thr Trp Thr Ile Gln Gly Ala  
610 615 620

Ala Asn Ala Leu Ser Gly Asp Val Trp Asp Ile Asp Asn Glu Phe  
625 630 635

<210> 17  
<211> 639  
<212> PRT  
<213> Homo sapiens

<400> 17

Leu Tyr Trp Asp Asp Leu Lys Arg Lys Leu Ser Glu Lys Leu Asp Ser  
1 5 10 15

Thr Asp Phe Thr Ser Thr Ile Lys Leu Leu Asn Glu Asn Ser Tyr Val  
20 25 30

Pro Arg Glu Ala Gly Ser Gln Lys Asp Glu Asn Leu Ala Leu Tyr Val  
35 40 45

Glu	Asn	Glu	Phe	Arg	Glu	Phe	Lys	Leu	Ser	Lys	Val	Trp	Arg	Asp	Gln	50	55	60	
His	Phe	Val	Lys	Ile	Gln	Val	Lys	Asp	Ser	Ala	Gln	Asn	Ser	Val	Ile	65	70	75	80
Ile	Val	Asp	Lys	Asn	Gly	Arg	Leu	Val	Tyr	Leu	Val	Glu	Asn	Pro	Gly	85	90	95	
Gly	Tyr	Val	Ala	Tyr	Ser	Lys	Ala	Ala	Thr	Val	Thr	Gly	Lys	Leu	Val	100	105	110	
His	Ala	Asn	Phe	Gly	Thr	Lys	Lys	Asp	Phe	Glu	Asp	Leu	Tyr	Thr	Pro	115	120	125	
Val	Asn	Gly	Ser	Ile	Val	Ile	Val	Arg	Ala	Gly	Lys	Ile	Thr	Phe	Ala	130	135	140	
Glu	Lys	Val	Ala	Asn	Ala	Glu	Ser	Leu	Asn	Ala	Ile	Gly	Val	Leu	Ile	145	150	155	160
Tyr	Met	Asp	Gln	Thr	Lys	Phe	Pro	Ile	Val	Asn	Ala	Glu	Leu	Ser	Phe	165	170	175	
Phe	Gly	His	Ala	His	Leu	Gly	Thr	Gly	Asp	Pro	Tyr	Thr	Pro	Gly	Phe	180	185	190	
Pro	Ser	Phe	Asn	His	Thr	Gln	Phe	Pro	Pro	Ser	Arg	Ser	Ser	Gly	Leu	195	200	205	
Pro	Asn	Ile	Pro	Val	Gln	Thr	Ile	Ser	Arg	Ala	Ala	Ala	Glu	Lys	Leu	210	215	220	
Phe	Gly	Asn	Met	Glu	Gly	Asp	Cys	Pro	Ser	Asp	Trp	Lys	Thr	Asp	Ser	225	230	235	240
Thr	Cys	Arg	Met	Val	Thr	Ser	Glu	Ser	Lys	Asn	Val	Lys	Leu	Thr	Val	245	250	255	
Ser	Asn	Val	Leu	Lys	Glu	Ile	Lys	Ile	Leu	Asn	Ile	Phe	Gly	Val	Ile	260	265	270	
Lys	Gly	Phe	Val	Glu	Pro	Asp	His	Tyr	Val	Val	Val	Gly	Ala	Gln	Arg	275	280	285	



Asp Ala Trp Gly Pro Gly Ala Ala Lys Ser Gly Val Gly Thr Ala Leu  
290 295 300

Leu Leu Lys Leu Ala Gln Met Phe Ser Asp Met Val Leu Lys Asp Gly  
305 310 315 320

Phe Gln Pro Ser Arg Ser Ile Ile Phe Ala Ser Trp Ser Ala Gly Asp  
325 330 335

Phe Gly Ser Val Gly Ala Thr Glu Trp Leu Glu Gly Tyr Leu Ser Ser  
340 345 350

Leu His Leu Lys Ala Phe Thr Tyr Ile Asn Leu Asp Lys Ala Val Leu  
355 360 365

Gly Thr Ser Asn Phe Lys Val Ser Ala Ser Pro Leu Leu Tyr Thr Leu  
370 375 380

Ile Glu Lys Thr Met Gln Asn Val Lys His Pro Val Thr Gly Gln Phe  
385 390 395 400

Leu Tyr Gln Asp Ser Asn Trp Ala Ser Lys Val Glu Lys Leu Thr Leu  
405 410 415

Asp Asn Ala Ala Phe Pro Phe Leu Ala Tyr Ser Gly Ile Pro Ala Val  
420 425 430

Ser Phe Cys Phe Cys Glu Asp Thr Asp Tyr Pro Tyr Leu Gly Thr Thr  
435 440 445

Met Asp Thr Tyr Lys Glu Leu Ile Glu Arg Ile Pro Glu Leu Asn Lys  
450 455 460

Val Ala Arg Ala Ala Ala Glu Val Ala Gly Gln Phe Val Ile Lys Leu  
465 470 475 480

Thr His Asp Val Glu Leu Asn Leu Asp Tyr Glu Glu Tyr Asn Ser Gln  
485 490 495

Leu Leu Ser Phe Val Arg Asp Leu Asn Gln Tyr Arg Ala Asp Ile Lys  
500 505 510

Glu Met Gly Leu Ser Leu Gln Trp Leu Tyr Ser Ala Arg Gly Asp Phe  
515 520 525

Phe Arg Ala Thr Ser Arg Leu Thr Thr Asp Phe Gly Asn Ala Glu Lys  
530 535 540

Thr Asp Arg Phe Val Met Lys Lys Leu Asn Asp Arg Val Met Arg Val  
545 550 555 560

Glu Tyr His Phe Leu Ser Pro Tyr Val Ser Pro Lys Glu Ser Pro Phe  
565 570 575

Arg His Val Phe Trp Gly Ser Gly Ser His Thr Leu Pro Ala Leu Leu  
580 585 590

Glu Asn Leu Lys Leu Arg Lys Gln Asn Asn Gly Ala Phe Asn Glu Thr  
595 600 605

Leu Phe Arg Asn Gln Leu Ala Leu Ala Thr Trp Thr Ile Gln Gly Ala  
610 615 620

Ala Asn Ala Leu Ser Gly Asp Val Trp Asp Ile Asp Asn Glu Phe  
625 630 635

<210> 18  
<211> 639  
<212> PRT  
<213> Homo sapiens

<400> 18

Leu Tyr Trp Asp Asp Leu Lys Arg Lys Leu Ser Glu Lys Leu Asp Ser  
1 5 10 15

Thr Asp Phe Thr Ser Thr Ile Lys Leu Leu Asn Glu Asn Ser Tyr Val  
20 25 30

Pro Arg Glu Ala Gly Ser Gln Lys Asp Glu Asn Leu Ala Leu Tyr Val  
35 40 45

Glu Asn Glu Phe Arg Glu Phe Lys Leu Ser Lys Val Trp Arg Asp Gln  
50 55 60

His Phe Val Lys Ile Gln Val Lys Asp Ser Ala Gln Asn Ser Val Ile  
65 70 75 80

Ile Val Asp Lys Asn Gly Arg Leu Val Tyr Leu Val Glu Asn Pro Gly  
85 90 95

Gly Tyr Val Ala Tyr Ser Lys Ala Ala Thr Val Thr Gly Lys Leu Val  
100 105 110

His Ala Asn Phe Gly Thr Lys Lys Asp Phe Glu Asp Leu Tyr Thr Pro  
115 120 125

Val Asn Gly Ser Ile Val Ile Val Arg Ala Gly Lys Ile Thr Phe Ala  
130 135 140

Glu Lys Val Ala Asn Ala Glu Ser Leu Asn Ala Ile Gly Val Leu Ile  
145 150 155 160

Tyr Met Asp Gln Thr Lys Phe Pro Ile Val Asn Ala Glu Leu Ser Phe  
165 170 175

Phe Gly His Ala His Leu Gly Thr Gly Asp Pro Tyr Thr Pro Gly Phe  
180 185 190

Pro Ser Phe Asn His Thr Gln Phe Pro Pro Ser Arg Ser Ser Gly Leu  
195 200 205

Pro Asn Ile Pro Val Gln Thr Ile Ser Arg Ala Ala Ala Glu Lys Leu  
210 215 220

Phe Gly Asn Met Glu Gly Asp Cys Pro Ser Asp Trp Lys Thr Asp Ser  
225 230 235 240

Thr Cys Arg Met Val Thr Ser Glu Ser Lys Asn Val Lys Leu Thr Val  
245 250 255

Ser Asn Val Leu Lys Glu Ile Lys Ile Leu Asn Ile Phe Gly Val Ile  
260 265 270

Lys Gly Phe Val Glu Pro Asp His Tyr Val Val Val Gly Ala Gln Arg  
275 280 285

Asp Ala Trp Gly Pro Gly Ala Ala Lys Ser Gly Val Gly Thr Ala Leu  
290 295 300

Leu Leu Lys Leu Ala Gln Met Phe Ser Asp Met Val Leu Lys Asp Gly  
305 310 315 320

Phe Gln Pro Ser Arg Ser Ile Ile Phe Ala Ser Trp Ser Ala Gly Asp  
325 330 335

Phe Gly Ser Val Gly Ala Thr Glu Trp Leu Glu Gly Tyr Leu Ser Ser  
340 345 350

Leu His Leu Lys Ala Phe Thr Tyr Ile Asn Leu Asp Lys Ala Val Leu  
355 360 365

Gly Thr Ser Asn Phe Lys Val Ser Ala Ser Pro Leu Leu Tyr Thr Leu  
370 375 380

Ile Glu Lys Thr Met Gln Asn Val Lys His Pro Val Thr Gly Gln Phe  
385 390 395 400

Leu Tyr Gln Asp Ser Asn Trp Ala Ser Lys Val Glu Lys Leu Thr Leu  
405 410 415

Asp Asn Ala Ala Phe Pro Phe Leu Ala Tyr Ser Gly Ile Pro Ala Val  
420 425 430

Ser Phe Cys Phe Cys Glu Asp Thr Asp Tyr Pro Tyr Leu Gly Thr Thr  
435 440 445

Met Asp Thr Tyr Lys Glu Leu Ile Glu Arg Ile Pro Glu Leu Asn Lys  
450 455 460

Val Ala Arg Ala Ala Ala Glu Val Ala Gly Gln Phe Val Ile Lys Leu  
465 470 475 480

Thr His Asp Val Glu Leu Asn Leu Asp Tyr Glu Glu Tyr Asn Ser Gln  
485 490 495

Leu Leu Ser Phe Val Arg Asp Leu Asn Gln Tyr Arg Ala Asp Ile Lys  
500 505 510

Glu Met Gly Leu Ser Leu Gln Trp Leu Tyr Ser Ala Arg Gly Asp Phe  
515 520 525

Phe Arg Ala Thr Ser Arg Leu Thr Thr Asp Phe Gly Asn Ala Glu Lys  
530 535 540

Thr Asp Arg Phe Val Met Lys Lys Leu Asn Asp Arg Val Met Arg Val  
545 550 555 560

Glu Tyr His Phe Leu Ser Pro Tyr Val Ser Pro Lys Glu Ser Pro Phe  
565 570 575

Arg His Val Phe Trp Gly Ser Gly Ser His Thr Leu Pro Ala Leu Leu  
580 585 590

Glu Asn Leu Lys Leu Arg Lys Gln Asn Asn Gly Ala Phe Asn Glu Thr  
595 600 605

Leu Phe Arg Asn Gln Leu Ala Leu Ala Thr Trp Thr Ile Gln Gly Ala  
610 615 620

Ala Asn Ala Leu Ser Gly Asp Val Trp Asp Ile Asp Asn Glu Phe  
625 630 635

<210> 19  
<211> 639  
<212> PRT  
<213> Homo sapiens

<400> 19

Leu Tyr Trp Asp Asp Leu Lys Arg Lys Leu Ser Glu Lys Leu Asp Ser  
1 5 10 15

Thr Asp Phe Thr Ser Thr Ile Lys Leu Leu Asn Glu Asn Ser Tyr Val  
20 25 30

Pro Arg Glu Ala Gly Ser Gln Lys Asp Glu Asn Leu Ala Leu Tyr Val  
35 40 45

Glu Asn Glu Phe Arg Glu Phe Lys Leu Ser Lys Val Trp Arg Asp Gln  
50 55 60

His Phe Val Lys Ile Gln Val Lys Asp Ser Ala Gln Asn Ser Val Ile  
65 70 75 80

Ile Val Asp Lys Asn Gly Arg Leu Val Tyr Leu Val Glu Asn Pro Gly  
85 90 95

Gly Tyr Val Ala Tyr Ser Lys Ala Ala Thr Val Thr Gly Lys Leu Val  
100 105 110

His Ala Asn Phe Gly Thr Lys Lys Asp Phe Glu Asp Leu Tyr Thr Pro  
115 120 125

Val Asn Gly Ser Ile Val Ile Val Arg Ala Gly Lys Ile Thr Phe Ala  
130 135 140

Glu Lys Val Ala Asn Ala Glu Ser Leu Asn Ala Ile Gly Val Leu Ile  
145 150 155 160

Tyr Met Asp Gln Thr Lys Phe Pro Ile Val Asn Ala Glu Leu Ser Phe  
165 170 175

Phe Gly His Ala His Leu Gly Thr Gly Asp Pro Tyr Thr Pro Gly Phe  
180 185 190

Pro Ser Phe Asn His Thr Gln Phe Pro Pro Ser Arg Ser Ser Gly Leu  
195 200 205

Pro Asn Ile Pro Val Gln Thr Ile Ser Arg Ala Ala Ala Glu Lys Leu  
210 215 220

Phe Gly Asn Met Glu Gly Asp Cys Pro Ser Asp Trp Lys Thr Asp Ser  
225 230 235 240

Thr Cys Arg Met Val Thr Ser Glu Ser Lys Asn Val Lys Leu Thr Val  
245 250 255

Ser Asn Val Leu Lys Glu Ile Lys Ile Leu Asn Ile Phe Gly Val Ile  
260 265 270

Lys Gly Phe Val Glu Pro Asp His Tyr Val Val Val Gly Ala Gln Arg  
275 280 285

Asp Ala Trp Gly Pro Gly Ala Ala Lys Ser Gly Val Gly Thr Ala Leu  
290 295 300

Leu Leu Lys Leu Ala Gln Met Phe Ser Asp Met Val Leu Lys Asp Gly  
305 310 315 320

Phe Gln Pro Ser Arg Ser Ile Ile Phe Ala Ser Trp Ser Ala Gly Asp  
325 330 335

Phe Gly Ser Val Gly Ala Thr Glu Trp Leu Glu Gly Tyr Leu Ser Ser  
340 345 350

Leu His Leu Lys Ala Phe Thr Tyr Ile Asn Leu Asp Lys Ala Val Leu  
355 360 365

Gly Thr Ser Asn Phe Lys Val Ser Ala Ser Pro Leu Leu Tyr Thr Leu  
370 375 380

Ile Glu Lys Thr Met Gln Asn Val Lys His Pro Val Thr Gly Gln Phe  
385 390 395 400

Leu Tyr Gln Asp Ser Asn Trp Ala Ser Lys Val Glu Lys Leu Thr Leu  
405 410 415

Asp Asn Ala Ala Phe Pro Phe Leu Ala Tyr Ser Gly Ile Pro Ala Val  
420 425 430

Ser Phe Cys Phe Cys Glu Asp Thr Asp Tyr Pro Tyr Leu Gly Thr Thr  
435 440 445

Met Asp Thr Tyr Lys Glu Leu Ile Glu Arg Ile Pro Glu Leu Asn Lys  
450 455 460

Val Ala Arg Ala Ala Ala Glu Val Ala Gly Gln Phe Val Ile Lys Leu  
465 470 475 480

Thr His Asp Val Glu Leu Asn Leu Asp Tyr Glu Glu Tyr Asn Ser Gln  
485 490 495

Leu Leu Ser Phe Val Arg Asp Leu Asn Gln Tyr Arg Ala Asp Ile Lys  
500 505 510

Glu Met Gly Leu Ser Leu Gln Trp Leu Tyr Ser Ala Arg Gly Asp Phe  
515 520 525

Phe Arg Ala Thr Ser Arg Leu Thr Thr Asp Phe Gly Asn Ala Glu Lys  
530 535 540

Thr Asp Arg Phe Val Met Lys Lys Leu Asn Asp Arg Val Met Arg Val  
545 550 555 560

Glu Tyr His Phe Leu Ser Pro Tyr Val Ser Pro Lys Glu Ser Pro Phe  
565 570 575

Arg His Val Phe Trp Gly Ser Gly Ser His Thr Leu Pro Ala Leu Leu  
580 585 590

Glu Asn Leu Lys Leu Arg Lys Gln Asn Asn Gly Ala Phe Asn Glu Thr  
595 600 605

Leu Phe Arg Asn Gln Leu Ala Leu Ala Thr Trp Thr Ile Gln Gly Ala  
610 615 620

Ala Asn Ala Leu Ser Gly Asp Val Trp Asp Ile Asp Asn Glu Phe  
625 630 635

<210> 20  
<211> 639  
<212> PRT  
<213> Homo sapiens

<400> 20

Leu Tyr Trp Asp Asp Leu Lys Arg Lys Leu Ser Glu Lys Leu Asp Ser  
1 5 10 15

Thr Asp Phe Thr Ser Thr Ile Lys Leu Leu Asn Glu Asn Ser Tyr Val  
20 25 30

Pro Arg Glu Ala Gly Ser Gln Lys Asp Glu Asn Leu Ala Leu Tyr Val  
35 40 45

Glu Asn Glu Phe Arg Glu Phe Lys Leu Ser Lys Val Trp Arg Asp Gln  
50 55 60

His Phe Val Lys Ile Gln Val Lys Asp Ser Ala Gln Asn Ser Val Ile  
65 70 75 80

Ile Val Asp Lys Asn Gly Arg Leu Val Tyr Leu Val Glu Asn Pro Gly  
85 90 95

Gly Tyr Val Ala Tyr Ser Lys Ala Ala Thr Val Thr Gly Lys Leu Val  
100 105 110

His Ala Asn Phe Gly Thr Lys Lys Asp Phe Glu Asp Leu Tyr Thr Pro  
115 120 125

Val Asn Gly Ser Ile Val Ile Val Arg Ala Gly Lys Ile Thr Phe Ala  
130 135 140

Glu Lys Val Ala Asn Ala Glu Ser Leu Asn Ala Ile Gly Val Leu Ile  
145 150 155 160

Tyr Met Asp Gln Thr Lys Phe Pro Ile Val Asn Ala Glu Leu Ser Phe  
165 170 175

Phe Gly His Ala His Leu Gly Thr Gly Asp Pro Tyr Thr Pro Gly Phe  
180 185 190

Pro Ser Phe Asn His Thr Gln Phe Pro Pro Ser Arg Ser Ser Gly Leu  
195 200 205

Pro Asn Ile Pro Val Gln Thr Ile Ser Arg Ala Ala Ala Glu Lys Leu  
210 215 220

Phe Gly Asn Met Glu Gly Asp Cys Pro Ser Asp Trp Lys Thr Asp Ser  
225 230 235 240



Thr Cys Arg Met Val Thr Ser Glu Ser Lys Asn Val Lys Leu Thr Val  
245 250 255

Ser Asn Val Leu Lys Glu Ile Lys Ile Leu Asn Ile Phe Gly Val Ile  
260 265 270

Lys Gly Phe Val Glu Pro Asp His Tyr Val Val Val Gly Ala Gln Arg  
275 280 285

Asp Ala Trp Gly Pro Gly Ala Ala Lys Ser Gly Val Gly Thr Ala Leu  
290 295 300

Leu Leu Lys Leu Ala Gln Met Phe Ser Asp Met Val Leu Lys Asp Gly  
305 310 315 320

Phe Gln Pro Ser Arg Ser Ile Ile Phe Ala Ser Trp Ser Ala Gly Asp  
325 330 335

Phe Gly Ser Val Gly Ala Thr Glu Trp Leu Glu Gly Tyr Leu Ser Ser  
340 345 350

Leu His Leu Lys Ala Phe Thr Tyr Ile Asn Leu Asp Lys Ala Val Leu  
355 360 365

Gly Thr Ser Asn Phe Lys Val Ser Ala Ser Pro Leu Leu Tyr Thr Leu  
370 375 380

Ile Glu Lys Thr Met Gln Asn Val Lys His Pro Val Thr Gly Gln Phe  
385 390 395 400

Leu Tyr Gln Asp Ser Asn Trp Ala Ser Lys Val Glu Lys Leu Thr Leu  
405 410 415

Asp Asn Ala Ala Phe Pro Phe Leu Ala Tyr Ser Gly Ile Pro Ala Val  
420 425 430

Ser Phe Cys Phe Cys Glu Asp Thr Asp Tyr Pro Tyr Leu Gly Thr Thr  
435 440 445

Met Asp Thr Tyr Lys Glu Leu Ile Glu Arg Ile Pro Glu Leu Asn Lys  
450 455 460

Val Ala Arg Ala Ala Ala Glu Val Ala Gly Gln Phe Val Ile Lys Leu  
465 470 475 480

Thr His Asp Val Glu Leu Asn Leu Asp Tyr Glu Glu Tyr Asn Ser Gln  
485 490 495

Leu Leu Ser Phe Val Arg Asp Leu Asn Gln Tyr Arg Ala Asp Ile Lys  
500 505 510

Glu Met Gly Leu Ser Leu Gln Trp Leu Tyr Ser Ala Arg Gly Asp Phe  
515 520 525

Phe Arg Ala Thr Ser Arg Leu Thr Thr Asp Phe Gly Asn Ala Glu Lys  
530 535 540

Thr Asp Arg Phe Val Met Lys Lys Leu Asn Asp Arg Val Met Arg Val  
545 550 555 560

Glu Tyr His Phe Leu Ser Pro Tyr Val Ser Pro Lys Glu Ser Pro Phe  
565 570 575

Arg His Val Phe Trp Gly Ser Gly Ser His Thr Leu Pro Ala Leu Leu  
580 585 590

Glu Asn Leu Lys Leu Arg Lys Gln Asn Asn Gly Ala Phe Asn Glu Thr  
595 600 605

Leu Phe Arg Asn Gln Leu Ala Leu Ala Thr Trp Thr Ile Gln Gly Ala  
610 615 620

Ala Asn Ala Leu Ser Gly Asp Val Trp Asp Ile Asp Asn Glu Phe  
625 630 635

<210> 21  
<211> 639  
<212> PRT  
<213> Homo sapiens

<400> 21

Leu Tyr Trp Asp Asp Leu Lys Arg Lys Leu Ser Glu Lys Leu Asp Ser  
1 5 10 15

Thr Asp Phe Thr Ser Thr Ile Lys Leu Leu Asn Glu Asn Ser Tyr Val  
20 25 30

Pro Arg Glu Ala Gly Ser Gln Lys Asp Glu Asn Leu Ala Leu Tyr Val  
35 40 45

Glu Asn Glu Phe Arg Glu Phe Lys Leu Ser Lys Val Trp Arg Asp Gln

50					55					60					
His	Phe	Val	Lys	Ile	Gln	Val	Lys	Asp	Ser	Ala	Gln	Asn	Ser	Val	Ile
65					70					75					80
Ile	Val	Asp	Lys	Asn	Gly	Arg	Leu	Val	Tyr	Leu	Val	Glu	Asn	Pro	Gly
				85					90					95	
Gly	Tyr	Val	Ala	Tyr	Ser	Lys	Ala	Ala	Thr	Val	Thr	Gly	Lys	Leu	Val
			100					105					110		
His	Ala	Asn	Phe	Gly	Thr	Lys	Lys	Asp	Phe	Glu	Asp	Leu	Tyr	Thr	Pro
		115					120					125			
Val	Asn	Gly	Ser	Ile	Val	Ile	Val	Arg	Ala	Gly	Lys	Ile	Thr	Phe	Ala
	130					135					140				
Glu	Lys	Val	Ala	Asn	Ala	Glu	Ser	Leu	Asn	Ala	Ile	Gly	Val	Leu	Ile
145				150						155					160
Tyr	Met	Asp	Gln	Thr	Lys	Phe	Pro	Ile	Val	Asn	Ala	Glu	Leu	Ser	Phe
			165						170					175	
Phe	Gly	His	Ala	His	Leu	Gly	Thr	Gly	Asp	Pro	Tyr	Thr	Pro	Gly	Phe
			180					185					190		
Pro	Ser	Phe	Asn	His	Thr	Gln	Phe	Pro	Pro	Ser	Arg	Ser	Ser	Gly	Leu
		195					200					205			
Pro	Asn	Ile	Pro	Val	Gln	Thr	Ile	Ser	Arg	Ala	Ala	Ala	Glu	Lys	Leu
	210					215					220				
Phe	Gly	Asn	Met	Glu	Gly	Asp	Cys	Pro	Ser	Asp	Trp	Lys	Thr	Asp	Ser
225				230						235					240
Thr	Cys	Arg	Met	Val	Thr	Ser	Glu	Ser	Lys	Asn	Val	Lys	Leu	Thr	Val
			245						250					255	
Ser	Asn	Val	Leu	Lys	Glu	Ile	Lys	Ile	Leu	Asn	Ile	Phe	Gly	Val	Ile
		260					265						270		
Lys	Gly	Phe	Val	Glu	Pro	Asp	His	Tyr	Val	Val	Val	Gly	Ala	Gln	Arg
		275					280					285			
Asp	Ala	Trp	Gly	Pro	Gly	Ala	Ala	Lys	Ser	Gly	Val	Gly	Thr	Ala	Leu
	290					295					300				

Leu Leu Lys Leu Ala Gln Met Phe Ser Asp Met Val Leu Lys Asp Gly  
305 310 315 320

Phe Gln Pro Ser Arg Ser Ile Ile Phe Ala Ser Trp Ser Ala Gly Asp  
325 330 335

Phe Gly Ser Val Gly Ala Thr Glu Trp Leu Glu Gly Tyr Leu Ser Ser  
340 345 350

Leu His Leu Lys Ala Phe Thr Tyr Ile Asn Leu Asp Lys Ala Val Leu  
355 360 365

Gly Thr Ser Asn Phe Lys Val Ser Ala Ser Pro Leu Leu Tyr Thr Leu  
370 375 380

Ile Glu Lys Thr Met Gln Asn Val Lys His Pro Val Thr Gly Gln Phe  
385 390 395 400

Leu Tyr Gln Asp Ser Asn Trp Ala Ser Lys Val Glu Lys Leu Thr Leu  
405 410 415

Asp Asn Ala Ala Phe Pro Phe Leu Ala Tyr Ser Gly Ile Pro Ala Val  
420 425 430

Ser Phe Cys Phe Cys Glu Asp Thr Asp Tyr Pro Tyr Leu Gly Thr Thr  
435 440 445

Met Asp Thr Tyr Lys Glu Leu Ile Glu Arg Ile Pro Glu Leu Asn Lys  
450 455 460

Val Ala Arg Ala Ala Ala Glu Val Ala Gly Gln Phe Val Ile Lys Leu  
465 470 475 480

Thr His Asp Val Glu Leu Asn Leu Asp Tyr Glu Glu Tyr Asn Ser Gln  
485 490 495

Leu Leu Ser Phe Val Arg Asp Leu Asn Gln Tyr Arg Ala Asp Ile Lys  
500 505 510

Glu Met Gly Leu Ser Leu Gln Trp Leu Tyr Ser Ala Arg Gly Asp Phe  
515 520 525

Phe Arg Ala Thr Ser Arg Leu Thr Thr Asp Phe Gly Asn Ala Glu Lys  
530 535 540

Thr Asp Arg Phe Val Met Lys Lys Leu Asn Asp Arg Val Met Arg Val  
545 550 555 560

Glu Tyr His Phe Leu Ser Pro Tyr Val Ser Pro Lys Glu Ser Pro Phe  
565 570 575

Arg His Val Phe Trp Gly Ser Gly Ser His Thr Leu Pro Ala Leu Leu  
580 585 590

Glu Asn Leu Lys Leu Arg Lys Gln Asn Asn Gly Ala Phe Asn Glu Thr  
595 600 605

Leu Phe Arg Asn Gln Leu Ala Leu Ala Thr Trp Thr Ile Gln Gly Ala  
610 615 620

Ala Asn Ala Leu Ser Gly Asp Val Trp Asp Ile Asp Asn Glu Phe  
625 630 635

<210> 22  
<211> 63  
<212> PRT  
<213> Cavia porcellus

<400> 22

Lys Ile Thr Phe Ala Glu Lys Val Ala Asn Ala Glu Ser Leu Asn Ala  
1 5 10 15

Leu Gly Val Leu Ile Tyr Leu Asp Trp Thr Lys Phe Pro Ile Pro Lys  
20 25 30

Ala Asp Leu Pro Val Phe Gly His Val His Leu Gly Thr Gly Asp Pro  
35 40 45

Tyr Thr Pro Gly Phe Pro Ser Phe Asn His Thr Gln Phe Pro Pro  
50 55 60

<210> 23  
<211> 17  
<212> PRT  
<213> Homo sapiens

<400> 23

Arg Val Glu Tyr His Phe Leu Ser Pro Tyr Val Ser Pro Lys Glu Ser  
1 5 10 15

Pro

<210> 24  
<211> 15  
<212> PRT  
<213> Homo sapiens

<400> 24

Glu	Ser	Pro	Phe	Arg	His	Val	Phe	Trp	Gly	Ser	Gly	Ser	His	Thr
1				5					10					15

<210> 25  
<211> 23  
<212> PRT  
<213> Homo sapiens

<220>  
<221> misc\_feature  
<222> (13)..(13)  
<223> Xaa can be any naturally occurring amino acid

<220>  
<221> misc\_feature  
<222> (20)..(20)  
<223> Xaa can be any naturally occurring amino acid

<400> 25

Leu	Ala	Gly	Lys	Glu	Ser	Pro	Val	Val	Glu	Glu	Pro	Xaa	Glu	Asp	Phe
1				5					10						15

Pro	Ala	Ala	Xaa	Arg	Leu	Thr
					20	

<210> 26  
<211> 15  
<212> PRT  
<213> Homo sapiens

<400> 26

Phe	Pro	Ile	Val	Asn	Ala	Glu	Leu	Ser	Phe	Phe	Gly	His	Ala	His
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<210> 27  
<211> 2283  
<212> DNA  
<213> Homo sapiens

<400> 27  
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accgggttca gcctggctcg gcaagtagat ggcgataaca gtcattgtgga gatgaaactt 120  
gctgtagatg aagaagaaaa tgctgacaat aacacaaagg ccaatgtcac. aaaacaaaaa 180

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tttatgattg	gctacttggg	ctattgtaaa	ggggtagaac	caaaaactga	gtgtgagaga	300
ctggcaggaa	ccgagtcctc	agtgagggag	gagccaggag	aggacttccc	tgcagcacgt	360
cgcttatatt	gggatgacct	gaagagaaa	ttgtcggaga	aactggacag	cacagacttc	420
accggcacca	tcaagctgct	gaatgaaaat	tcatatgtcc	ctcgtgaggc	tggatctcaa	480
aaagatgaaa	atcttgcggt	gtatgttgaa	aatcaatttc	gtgaatttaa	actcagcaaa	540
gtctggcggt	atcaacattt	tgtaaagatt	cagggtcaaag	acagcgctca	aaactcgggt	600
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gcgtatagta	aggctgcaac	agttactggt	aaactgggtc	atgctaattt	tggtactaaa	720
aaagattttg	aggatttata	cactcctgtg	aatggatcta	tagtgattgt	cagagcaggg	780
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atatacatgg	accagactaa	atttcccatt	gttaacgcag	aactttcatt	ctttggacat	900
gctcatctgg	ggacaggtga	cccttacaca	cctggattcc	cttccttcaa	tcacactcag	960
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tctacatgta	ggatggtaac	ctcagaaaagc	aagaatgtga	agctcactgt	gagcaatgtg	1140
ctgaaagaga	taaaaattct	taacatcttt	ggagttatta	aaggctttgt	agaaccagat	1200
cactatgttg	tagttggggc	ccagagagat	gcatggggcc	ctggagctgc	aaaatccggt	1260
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gggtttcagc	ccagcagaag	cattatcttt	gccagttgga	gtgctggaga	ctttggatcg	1380
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tatattaatc	tggataaagc	ggttcttggt	accagcaact	tcaaggtttc	tgccagccca	1500
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acagattatc	cttatttggg	taccaccatg	gacacctata	aggaactgat	tgagaggatt	1740
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ctaaccatg	atgttgaatt	gaacctggac	tatgagaggt	acaacagcca	actgctttca	1860
tttgtgaggg	atctgaacca	atacagagca	gacataaagg	aaatgggcct	gagtttacag	1920
tggctgtatt	ctgctcgtgg	agacttcttc	cgtgctactt	ccagactaac	aacagatttc	1980

gggaatgctg	agaaaacaga	cagatttgtc	atgaagaaac	tcaatgatcg	tgtcatgaga	2040
gtggagtatc	acttcctctc	tccctacgta	tctccaaaag	agtctccttt	ccgacatgtc	2100
ttctggggct	ccggctctca	cacgctgcca	gctttactgg	agaacttgaa	actgcgtaaa	2160
caaaataacg	gtgcttttta	tgaaacgctg	ttcagaaacc	agttggctct	agctacttgg	2220
actattcagg	gagctgcaaa	tgccctctct	ggtgacgttt	gggacattga	caatgagttt	2280
taa						2283

<210> 28  
 <211> 2283  
 <212> DNA  
 <213> Homo sapiens

<400> 28	
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acccggttca	gcctggctcg gcaagtagat ggcgataaca gtcattgtga gatgaaactt 120
gctgtagatg	aagaagaaaa tgctgacaat aacacaaaagg ccaatgtcac aaaaccaaaa 180
aggtgtagtg	gaagtatctg ctatgggact attgctgtga tcgtcttttt cttgattgga 240
tttatgattg	gctacttggg ctattgtaaa ggggtagaac caaaaactga gtgtgagaga 300
ctggcaggaa	ccgagtctcc agtgaggagg gagccaggag aggacttccc tgcagcacgt 360
cgcttatatt	gggatgacct gaagagaaag ttgtcggaga aactggacag cacagacttc 420
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Gln Val Val Ile Ile Asp Met Asn Asp Pro Ser Asn Pro Ile Arg Arg  
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Pro Ile Ser Ala Asp Ser Ala Ile Met Asn Pro Ala Ser Lys Val Ile  
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Thr	Gly	Thr	Cys	Ile	Tyr	Met	Asn	Arg	Ile	Ser	Gly	Glu	Thr	Ile	Phe
	290					295					300				
Val	Thr	Ala	Pro	His	Glu	Ala	Thr	Ala	Gly	Ile	Ile	Gly	Val	Asn	Arg
305					310					315					320
Lys	Gly	Gln	Val	Leu	Ser	Val	Cys	Val	Glu	Glu	Glu	Asn	Ile	Ile	Pro
				325					330					335	
Tyr	Ile	Thr	Asn	Val	Leu	Gln	Asn	Pro	Asp	Leu	Ala	Leu	Arg	Met	Ala
			340					345					350		



Val Arg Asn Asn Leu Ala Gly Ala Glu Glu Leu Phe Ala Arg Lys Phe  
355 360 365

Asn Ala Leu Phe Ala Gln Gly Asn Tyr Ser Glu Ala Ala Lys Val Ala  
370 375 380

Ala Asn Ala Pro Lys Gly Ile Leu Arg Thr Pro Asp Thr Ile Arg Arg  
385 390 395 400

Phe Gln Ser Val Pro Ala Gln Pro Gly Gln Thr Ser Pro Leu Leu Gln  
405 410 415

Tyr Phe Gly Ile Leu Leu Asp Gln Gly Gln Leu Asn Lys Tyr Glu Ser  
420 425 430

Leu Glu Leu Cys Arg Pro Val Leu Gln Gln Gly Arg Lys Gln Leu Leu  
435 440 445

Glu Lys Trp Leu Lys Glu Asp Lys Leu Glu Cys Ser Glu Glu Leu Gly  
450 455 460

Asp Leu Val Lys Ser Val Asp Pro Thr Leu Ala Leu Ser Val Tyr Leu  
465 470 475 480

Arg Ala Asn Val Pro Asn Lys Val Ile Gln Cys Phe Ala Glu Thr Gly  
485 490 495

Gln Val Gln Lys Ile Val Leu Tyr Ala Lys Lys Val Gly Tyr Thr Pro  
500 505 510

Asp Trp Ile Phe Leu Leu Arg Asn Val Met Arg Ile Ser Pro Asp Gln  
515 520 525

Gly Gln Gln Phe Ala Gln Met Leu Val Gln Asp Glu Glu Pro Leu Ala  
530 535 540

Asp Ile Thr Gln Ile Val Asp Val Phe Met Glu Tyr Asn Leu Ile Gln  
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Gln Cys Thr Ala Phe Leu Leu Asp Ala Leu Lys Asn Asn Arg Pro Ser  
565 570 575

Glu Gly Pro Leu Gln Thr Arg Leu Leu Glu Met Asn Leu Met His Ala  
580 585 590

Pro Gln Val Ala Asp Ala Ile Leu Gly Asn Gln Met Phe Thr His Tyr  
595 600 605

Asp Arg Ala His Ile Ala Gln Leu Cys Glu Lys Ala Gly Leu Leu Gln  
610 615 620

Arg Ala Leu Glu His Phe Thr Asp Leu Tyr Asp Ile Lys Arg Ala Val  
625 630 635 640

Val His Thr His Leu Leu Asn Pro Glu Trp Leu Val Asn Tyr Phe Gly  
645 650 655

Ser Leu Ser Val Glu Asp Ser Leu Glu Cys Leu Arg Ala Met Leu Ser  
660 665 670

Ala Asn Ile Arg Gln Asn Leu Gln Ile Cys Val Gln Val Ala Ser Lys  
675 680 685

Tyr His Glu Gln Leu Ser Thr Gln Ser Leu Ile Glu Leu Phe Glu Ser  
690 695 700

Phe Lys Ser Phe Glu Gly Leu Phe Tyr Phe Leu Gly Ser Ile Val Asn  
705 710 715 720

Phe Ser Gln Asp Pro Asp Val His Phe Lys Tyr Ile Gln Ala Ala Cys  
725 730 735

Lys Thr Gly Gln Ile Lys Glu Val Glu Arg Ile Cys Arg Glu Ser Asn  
740 745 750

Cys Tyr Asp Pro Glu Arg Val Lys Asn Phe Leu Lys Glu Ala Lys Leu  
755 760 765

Thr Asp Gln Leu Pro Leu Ile Ile Val Cys Asp Arg Phe Asp Phe Val  
770 775 780

His Asp Leu Val Leu Tyr Leu Tyr Arg Asn Asn Leu Gln Lys Tyr Ile  
785 790 795 800

Glu Ile Tyr Val Gln Lys Val Asn Pro Ser Arg Leu Pro Val Val Ile  
805 810 815

Gly Gly Leu Leu Asp Val Asp Cys Ser Glu Asp Val Ile Lys Asn Leu  
820 825 830

Ile Leu Val Val Arg Gly Gln Phe Ser Thr Asp Glu Leu Val Ala Glu  
835 840 845

Val Glu Lys Arg Asn Arg Leu Lys Leu Leu Leu Pro Trp Leu Glu Ala  
850 855 860

Arg Ile His Glu Gly Cys Glu Glu Pro Ala Thr His Asn Ala Leu Ala  
865 870 875 880

Lys Ile Tyr Ile Asp Ser Asn Asn Asn Pro Glu Arg Phe Leu Arg Glu  
885 890 895

Asn Pro Tyr Tyr Asp Ser Arg Val Val Gly Lys Tyr Cys Glu Lys Arg  
900 905 910

Asp Pro His Leu Ala Cys Val Ala Tyr Glu Arg Gly Gln Cys Asp Leu  
915 920 925

Glu Leu Ile Asn Val Cys Asn Glu Asn Ser Leu Phe Lys Ser Leu Ser  
930 935 940

Arg Tyr Leu Val Arg Arg Lys Asp Pro Glu Leu Trp Gly Ser Val Leu  
945 950 955 960

Leu Glu Ser Asn Pro Tyr Arg Arg Pro Leu Ile Asp Gln Val Val Gln  
965 970 975

Thr Ala Leu Ser Glu Thr Gln Asp Pro Glu Glu Val Ser Val Thr Val  
980 985 990

Lys Ala Phe Met Thr Ala Asp Leu Pro Asn Glu Leu Ile Glu Leu Leu  
995 1000 1005

Glu Lys Ile Val Leu Asp Asn Ser Val Phe Ser Glu His Arg Asn  
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Leu Gln Asn Leu Leu Ile Leu Thr Ala Ile Lys Ala Asp Arg Thr  
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Arg Val Met Glu Tyr Ile Asn Arg Leu Asp Asn Tyr Asp Ala Pro  
1040 1045 1050

Asp Ile Ala Asn Ile Ala Ile Ser Asn Glu Leu Phe Glu Glu Ala  
1055 1060 1065

Phe Ala Ile Phe Arg Lys Phe Asp Val Asn Thr Ser Ala Val Gln

1070	1075	1080
Val Leu Ile Glu His Ile Gly 1085	Asn Leu Asp Arg Ala 1090	Tyr Glu Phe 1095
Ala Glu Arg Cys Asn Glu Pro 1100	Ala Val Trp Ser Gln 1105	Leu Ala Lys 1110
Ala Gln Leu Gln Lys Gly Met 1115	Val Lys Glu Ala Ile 1120	Asp Ser Tyr 1125
Ile Lys Ala Asp Asp Pro Ser 1130	Ser Tyr Met Glu Val 1135	Val Gln Ala 1140
Ala Asn Thr Ser Gly Asn Trp 1145	Glu Glu Leu Val Lys 1150	Tyr Leu Gln 1155
Met Ala Arg Lys Lys Ala Arg 1160	Glu Ser Tyr Val Glu 1165	Thr Glu Leu 1170
Ile Phe Ala Leu Ala Lys Thr 1175	Asn Arg Leu Ala Glu 1180	Leu Glu Glu 1185
Phe Ile Asn Gly Pro Asn Asn 1190	Ala His Ile Gln Gln 1195	Val Gly Asp 1200
Arg Cys Tyr Asp Glu Lys Met 1205	Tyr Asp Ala Ala Lys 1210	Leu Leu Tyr 1215
Asn Asn Val Ser Asn Phe Gly 1220	Arg Leu Ala Ser Thr 1225	Leu Val His 1230
Leu Gly Glu Tyr Gln Ala Ala 1235	Val Asp Gly Ala Arg 1240	Lys Ala Asn 1245
Ser Thr Arg Thr Trp Lys Glu 1250	Val Cys Phe Ala Cys 1255	Val Asp Gly 1260
Lys Glu Phe Arg Leu Ala Gln 1265	Met Cys Gly Leu His 1270	Ile Val Val 1275
His Ala Asp Glu Leu Glu Glu 1280	Leu Ile Asn Tyr Tyr 1285	Gln Asp Arg 1290
Gly Tyr Phe Glu Glu Leu Ile 1295	Thr Met Leu Glu Ala 1300	Ala Leu Gly 1305

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Tyr	Ser	Lys	Phe	Lys	Pro	Gln	Lys	Met	Arg	Glu	His	Leu	Glu	Leu
1325						1330					1335			
Phe	Trp	Ser	Arg	Val	Asn	Ile	Pro	Lys	Val	Leu	Arg	Ala	Ala	Glu
1340						1345					1350			
Gln	Ala	His	Leu	Trp	Ala	Glu	Leu	Val	Phe	Leu	Tyr	Asp	Lys	Tyr
1355						1360					1365			
Glu	Glu	Tyr	Asp	Asn	Ala	Ile	Ile	Thr	Met	Met	Asn	His	Pro	Thr
1370						1375					1380			
Asp	Ala	Trp	Lys	Glu	Gly	Gln	Phe	Lys	Asp	Ile	Ile	Thr	Lys	Val
1385						1390					1395			
Ala	Asn	Val	Glu	Leu	Tyr	Tyr	Arg	Ala	Ile	Gln	Phe	Tyr	Leu	Glu
1400						1405					1410			
Phe	Lys	Pro	Leu	Leu	Leu	Asn	Asp	Leu	Leu	Met	Val	Leu	Ser	Pro
1415						1420					1425			
Arg	Leu	Asp	His	Thr	Arg	Ala	Val	Asn	Tyr	Phe	Ser	Lys	Val	Lys
1430						1435					1440			
Gln	Leu	Pro	Leu	Val	Lys	Pro	Tyr	Leu	Arg	Ser	Val	Gln	Asn	His
1445						1450					1455			
Asn	Asn	Lys	Ser	Val	Asn	Glu	Ser	Leu	Asn	Asn	Leu	Phe	Ile	Thr
1460						1465					1470			
Glu	Glu	Asp	Tyr	Gln	Ala	Leu	Arg	Thr	Ser	Ile	Asp	Ala	Tyr	Asp
1475						1480					1485			
Asn	Phe	Asp	Asn	Ile	Ser	Leu	Ala	Gln	Arg	Leu	Glu	Lys	His	Glu
1490						1495					1500			
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Asn	Arg	Trp	Lys	Gln	Ser	Val	Glu	Leu	Cys	Lys	Lys	Asp	Ser	Leu
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Tyr Lys Asp Ala Met Gln Tyr Ala Ser Glu Ser Lys Asp Thr Glu  
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Leu Ala Glu Glu Leu Leu Gln Trp Phe Leu Gln Glu Glu Lys Arg  
1550 1555 1560

Glu Cys Phe Gly Ala Cys Leu Phe Thr Cys Tyr Asp Leu Leu Arg  
1565 1570 1575

Pro Asp Val Val Leu Glu Thr Ala Trp Arg His Asn Ile Met Asp  
1580 1585 1590

Phe Ala Met Pro Tyr Phe Ile Gln Val Met Lys Glu Tyr Leu Thr  
1595 1600 1605

Lys Val Asp Lys Leu Asp Ala Ser Glu Ser Leu Arg Lys Glu Glu  
1610 1615 1620

Glu Gln Ala Thr Glu Thr Gln Pro Ile Val Tyr Gly Gln Pro Gln  
1625 1630 1635

Leu Met Leu Thr Ala Gly Pro Ser Val Ala Val Pro Pro Gln Ala  
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1655 1660 1665

Pro Gly Phe Gly Tyr Ser Met  
1670 1675

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<212> DNA  
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<400> 36

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Tyr Gly Ser Val Leu Asp Asn Glu Arg Leu Thr Ala Glu Glu Met Asp  
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Glu Arg Arg Arg Gln Asn Val Ala Tyr Glu Tyr Leu Cys His Leu Glu  
35 40 45

Glu Ala Lys Arg Trp Met Glu Ala Cys Leu Gly Glu Asp Leu Pro Pro  
50 55 60

Thr Thr Glu Leu Glu Glu Gly Leu Arg Asn Gly Val Tyr Leu Ala Lys  
65 70 75 80

Leu Gly Asn Phe Phe Ser Pro Lys Val Val Ser Leu Lys Lys Ile Tyr

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Asp Arg Glu Gln Thr Arg Tyr Lys Ala Thr Gly Leu His Phe Arg His		
100	105	110
Thr Asp Asn Val Ile Gln Trp Leu Asn Ala Met Asp Glu Ile Gly Leu		
115	120	125
Pro Lys Ile Phe Tyr Pro Glu Thr Thr Asp Ile Tyr Asp Arg Lys Asn		
130	135	140
Met Pro Arg Cys Ile Tyr Cys Ile His Ala Leu Ser Leu Tyr Leu Phe		
145	150	155
Lys Leu Gly Leu Ala Pro Gln Ile Gln Asp Leu Tyr Gly Lys Val Asp		
165	170	175
Phe Thr Glu Glu Glu Ile Asn Asn Met Lys Thr Glu Leu Glu Lys Tyr		
180	185	190
Gly Ile Gln Met Pro Ala Phe Ser Lys Ile Gly Gly Ile Leu Ala Asn		
195	200	205
Glu Leu Ser Val Asp Glu Ala Ala Leu His Ala Ala Val Ile Ala Ile		
210	215	220
Asn Glu Ala Ile Asp Arg Arg Ile Pro Ala Asp Thr Phe Ala Ala Leu		
225	230	235
Lys Asn Pro Asn Ala Met Leu Val Asn Leu Glu Glu Pro Leu Ala Ser		
245	250	255
Thr Tyr Gln Asp Ile Leu Tyr Gln Ala Lys Gln Asp Lys Met Thr Asn		
260	265	270
Ala Lys Asn Arg Thr Glu Asn Ser Glu Arg Glu Arg Asp Val Tyr Glu		
275	280	285
Glu Leu Leu Thr Gln Ala Glu Ile Gln Gly Asn Ile Asn Lys Val Asn		
290	295	300
Thr Phe Ser Ala Leu Ala Asn Ile Asp Leu Ala Leu Glu Gln Gly Asp		
305	310	315
Ala Leu Ala Leu Phe Arg Ala Leu Gln Ser Pro Ala Leu Gly Leu Arg		
325	330	335

Gly Leu Gln Gln Gln Asn Ser Asp Trp Tyr Leu Lys Gln Leu Leu Ser  
340 345 350

Asp Lys Gln Gln Lys Arg Gln Ser Gly Gln Thr Asp Pro Leu Gln Lys  
355 360 365

Glu Glu Leu Gln Ser Gly Val Asp Ala Ala Asn Ser Ala Ala Gln Gln  
370 375 380

Tyr Gln Arg Arg Leu Ala Ala Val Ala Leu Ile Asn Ala Ala Ile Gln  
385 390 395 400

Lys Gly Val Ala Glu Lys Thr Val Leu Glu Leu Met Asn Pro Glu Ala  
405 410 415

Gln Leu Pro Gln Val Tyr Pro Phe Ala Ala Asp Leu Tyr Gln Lys Glu  
420 425 430

Leu Ala Thr Leu Gln Arg Gln Ser Pro Glu His Asn Leu Thr His Pro  
435 440 445

Glu Leu Ser Val Ala Val Glu Met Leu Ser Ser Val Ala Leu Ile Asn  
450 455 460

Arg Ala Leu Glu Ser Gly Asp Val Asn Thr Val Trp Lys Gln Leu Ser  
465 470 475 480

Ser Ser Val Thr Gly Leu Thr Asn Ile Glu Glu Glu Asn Cys Gln Arg  
485 490 495

Tyr Leu Asp Glu Leu Met Lys Leu Lys Ala Gln Ala His Ala Glu Asn  
500 505 510

Asn Glu Phe Ile Thr Trp Asn Asp Ile Gln Ala Cys Val Asp His Val  
515 520 525

Asn Leu Val Val Gln Glu Glu His Glu Arg Ile Leu Ala Ile Gly Leu  
530 535 540

Ile Asn Glu Ala Leu Asp Glu Gly Asp Ala Gln Lys Thr Leu Gln Ala  
545 550 555 560

Leu Gln Ile Pro Ala Ala Lys Leu Glu Gly Val Leu Ala Glu Val Ala  
565 570 575

Gln His Tyr Gln Asp Thr Leu Ile Arg Ala Lys Arg Glu Lys Ala Gln  
580 585 590

Glu Ile Gln Asp Glu Ser Ala Val Leu Trp Leu Asp Glu Ile Gln Gly  
595 600 605

Gly Ile Trp Gln Ser Asn Lys Asp Thr Gln Glu Ala Gln Lys Phe Ala  
610 615 620

Leu Gly Ile Phe Ala Ile Asn Glu Ala Val Glu Ser Gly Asp Val Gly  
625 630 635 640

Lys Thr Leu Ser Ala Leu Arg Ser Pro Asp Val Gly Leu Tyr Gly Val  
645 650 655

Ile Pro Glu Cys Gly Glu Thr Tyr His Ser Asp Leu Ala Glu Ala Lys  
660 665 670

Lys Lys Lys Leu Ala Val Gly Asp Asn Asn Ser Lys Trp Val Lys His  
675 680 685

Trp Val Lys Gly Gly Tyr Tyr Tyr Tyr His Asn Leu Glu Thr Gln Glu  
690 695 700

Gly Gly Trp Asp Glu Pro Pro Asn Phe Val Gln Asn Ser Met Gln Leu  
705 710 715 720

Ser Arg Glu Glu Ile Gln Ser Ser Ile Ser Gly Val Thr Ala Ala Tyr  
725 730 735

Asn Arg Glu Gln Leu Trp Leu Ala Asn Glu Gly Leu Ile Thr Arg Leu  
740 745 750

Gln Ala Arg Cys Arg Gly Tyr Leu Val Arg Gln Glu Phe Arg Ser Arg  
755 760 765

Met Asn Phe Leu Lys Lys Gln Ile Pro Ala Ile Thr Cys Ile Gln Ser  
770 775 780

Gln Trp Arg Gly Tyr Lys Gln Lys Lys Ala Tyr Gln Asp Arg Leu Ala  
785 790 795 800

Tyr Leu Arg Ser His Lys Asp Glu Val Val Lys Ile Gln Ser Leu Ala  
805 810 815

Arg Met His Gln Ala Arg Lys Arg Tyr Arg Asp Arg Leu Gln Tyr Phe  
820 825 830

Arg Asp His Ile Asn Asp Ile Ile Lys Ile Gln Ala Phe Ile Arg Ala  
835 840 845

Asn Lys Ala Arg Asp Asp Tyr Lys Thr Leu Ile Asn Ala Glu Asp Pro  
850 855 860

Pro Met Val Val Val Arg Lys Phe Val His Leu Leu Asp Gln Ser Asp  
865 870 875 880

Gln Asp Phe Gln Glu Glu Leu Asp Leu Met Lys Met Arg Glu Glu Val  
885 890 895

Ile Thr Leu Ile Arg Ser Asn Gln Gln Leu Glu Asn Asp Leu Asn Leu  
900 905 910

Met Asp Ile Lys Ile Gly Leu Leu Val Lys Asn Lys Ile Thr Leu Gln  
915 920 925

Asp Val Val Ser His Ser Lys Lys Leu Thr Lys Lys Asn Lys Glu Gln  
930 935 940

Leu Ser Asp Met Met Met Ile Asn Lys Gln Lys Gly Gly Leu Lys Ala  
945 950 955 960

Leu Ser Lys Glu Lys Arg Glu Lys Leu Glu Ala Tyr Gln His Leu Phe  
965 970 975

Tyr Leu Leu Gln Thr Asn Pro Thr Tyr Leu Ala Lys Leu Ile Phe Gln  
980 985 990

Met Pro Gln Asn Lys Ser Thr Lys Phe Met Asp Ser Val Ile Phe Thr  
995 1000 1005

Leu Tyr Asn Tyr Ala Ser Asn Gln Arg Glu Glu Tyr Leu Leu Leu  
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Arg Leu Phe Lys Thr Ala Leu Gln Glu Glu Ile Lys Ser Lys Val  
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Met Val Val Ser Phe Asn Arg Gly Ala Arg Gly Gln Asn Ala Leu

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Ser Leu Asn Ile Lys Thr Asp	Pro Val Asp Ile Tyr	Lys Ser Trp		
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Val Asn Gln Met Glu Ser Gln	Thr Gly Glu Ala Ser	Lys Leu Pro		
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1130	1135	1140		
Lys Phe Leu Ser Ala Ile Val	Ser Ser Val Asp Lys	Ile Pro Tyr		
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Gly Met Arg Phe Ile Ala Lys	Val Leu Lys Asp Ser	Leu His Glu		
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Lys Phe Pro Asp Ala Gly Glu	Asp Glu Leu Leu Lys	Ile Ile Gly		
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Asn Leu Leu Tyr Tyr Arg Tyr	Met Asn Pro Ala Ile	Val Ala Pro		
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Asp Ala Phe Asp Ile Ile Asp	Leu Ser Ala Gly Gly	Gln Leu Thr		
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Thr Asp Gln Arg Arg Asn Leu	Gly Ser Ile Ala Lys	Met Leu Gln		
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His Ala Ala Ser Asn Lys Met	Phe Leu Gly Asp Asn	Ala His Leu		
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Ser Ile Ile Asn Glu Tyr Leu	Ser Gln Ser Tyr Gln	Lys Phe Arg		
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Arg Phe Phe Gln Thr Ala Cys	Asp Val Pro Glu Leu	Gln Asp Lys		
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Phe Asn Val Asp Glu Tyr Ser	Asp Leu Val Thr Leu	Thr Lys Pro		
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<213> Homo sapiens

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<211> 724
<212> PRT
<213> Homo sapiens

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<400> 38

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Tyr Ser Asn Lys Glu Ile Phe Leu Arg Glu Leu Ile Ser Asn Ala Ser
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Asp Ala Leu Asp Lys Ile Arg Tyr Glu Ser Leu Thr Asp Pro Ser Lys
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Leu Asp Ser Gly Lys Glu Leu Lys Ile Asp Ile Ile Pro Asn Pro Gln
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Glu Arg Thr Leu Thr Leu Val Asp Thr Gly Ile Gly Met Thr Lys Ala
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Ala Gly Gly Ser Phe Thr Val Arg Ala Asp His Gly Glu Pro Ile Gly  
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Arg Gly Thr Lys Val Ile Leu His Leu Lys Glu Asp Gln Thr Glu Tyr  
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Leu Glu Glu Arg Arg Val Lys Glu Val Val Lys Lys His Ser Gln Phe  
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Ile Gly Tyr Pro Ile Thr Leu Tyr Leu Glu Lys Glu Arg Glu Lys Glu  
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Glu Glu Asp Asp Ser Gly Lys Asp Lys Lys Lys Lys Thr Lys Lys Ile  
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Tyr Lys Ser Leu Thr Asn Asp Trp Glu Asp His Leu Ala Val Lys His  
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Lys Ala Glu Ala Asp Lys Asn Asp Lys Ala Val Lys Asp Leu Val Val 645 650 655		
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Pro Gln Thr His Ser Asn Arg Ile Tyr Arg Met Ile Lys Leu Gly Leu 675 680 685		
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